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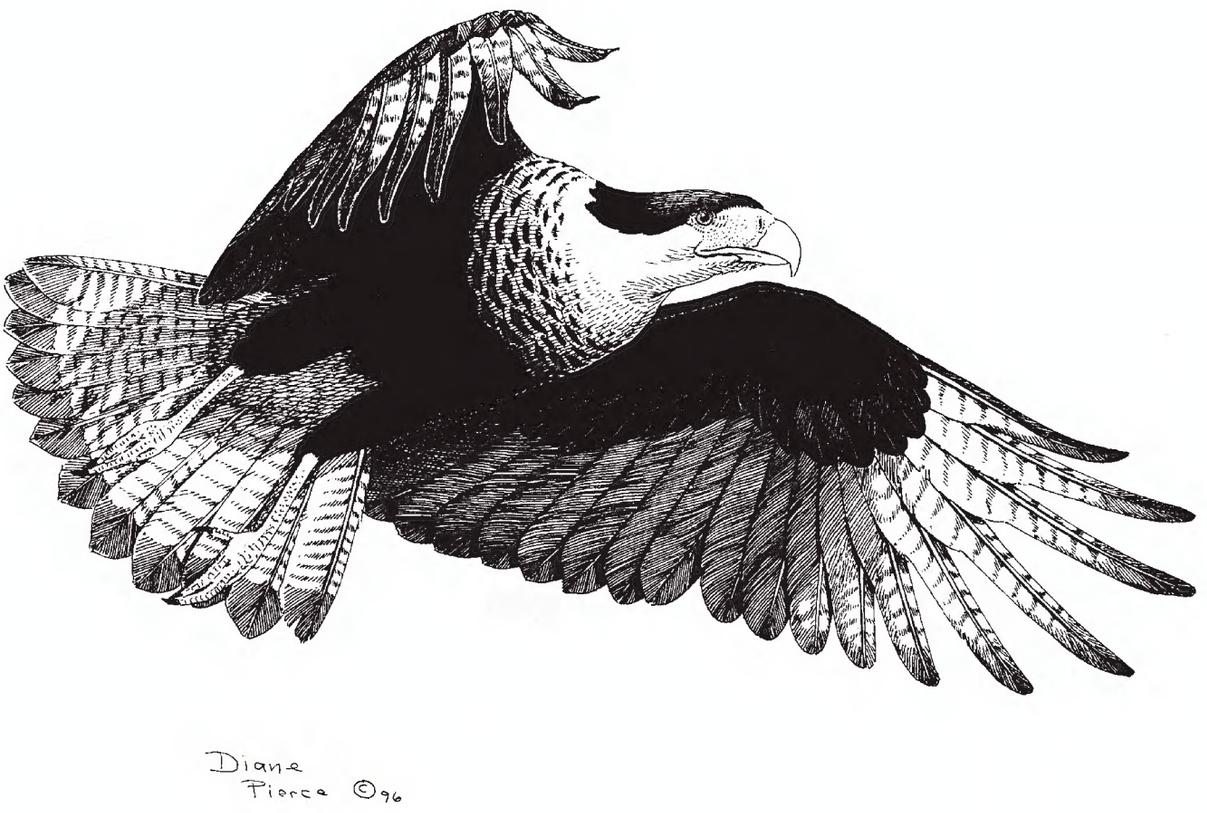

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NESTING PHENOLOGY AND BURROW OCCUPANCY OF THE FLORIDA BURROWING OWL (*Athene cunicularia floridana*) IN SOUTH FLORIDA

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Abstract.— Incidental take permits by the Florida Fish and Wildlife Conservation Commission (FWC) are required when a Burrowing Owl burrow will be impacted by clearing or construction. These permits are issued only for burrows that are inactive. The typical breeding season for Burrowing Owls is 15 February–10 July. This project had 4 chronology-related objectives: 1) estimate the percentage of burrows in south Florida that became active prior to 15 February, 2) identify the range of dates when nesting was initiated, 3) estimate the percentage of burrows occupied by adult owls prior to 15 February, and 4) estimate the percentage of decorated burrows that were active. A fifth objective was to determine if the burrow lengths of Burrowing Owls in south Florida are comparable to those in the published literature. We scoped 89 burrows at four sites from 30 November 2007 to 14 February 2008. Only 4.4% (n = 4) of the burrows were active (contained eggs or flightless chicks). Burrow lengths ranged from 0.3 m to 3.2 m with a mean length of 2.05 m. This study found less than a 5% probability of a burrow being active between the 30 November and 14 February so the risk of encountering an active burrow while executing an FWC incidental take permit during this period is low.

Key words*:* breeding status, Burrowing Owl, burrow length, nesting phenology

INTRODUCTION

Historically, the Florida Burrowing Owl was found primarily in Florida's central prairies. However, clearing for development, draining and filling of wetlands, and construction of numerous parks, schools, and airports have created suitable habitat for Burrowing Owls in urban areas throughout most of peninsular Florida (Millsap and Bear 2000). Due to native habitat loss and the owl's dependence on human-maintained habitat, the Florida Fish and Wildlife

Conservation Commission (FWC) classified the Florida Burrowing Owl as a Threatened species in 2016 (FWC 2016). An incidental take permit from FWC is now necessary to proceed with clearing or constructing on properties when Burrowing Owls and their burrows will be affected. Currently, FWC issues incidental take permits only for inactive Burrowing Owl burrows. Inactive burrows are defined as not containing eggs or flightless young. Generally, most burrows are considered inactive outside the period from 15 February through 10 July, the breeding season officially designated by FWC in its *Florida Burrowing Owl Species Conservation Measures and Permitting Guidelines* (hereafter referred to as Permitting Guidelines; FWC 2018). However, chicks have been found as early as October at Cape Coral, Lee County, and Florida Atlantic University, Palm Beach County (Millsap and Bear 1990, McKie 2003). Permitting Guidelines also recommend a minimum buffer of 3 m (10 ft) around Burrowing Owl burrows during the non-breeding season to prevent harm to burrows by construction or other human activities (FWC 2018). The buffer is based on burrow lengths found by Millsap (1996) at Cape Coral, Florida, but there are little to no published data for other regions of Florida.

Unfortunately, it is not possible to determine burrow or nest status of urban Florida Burrowing Owls by examining only the exterior, and it is difficult to estimate when egg laying occurs because pair formation is not always evident and owls sometimes occupy their burrows year-round (Millsap 1996). The presence of one or two adult owls at a burrow indicates that the burrow is occupied but not whether it is active or inactive. Occupied burrows may be decorated by the Burrowing Owls with materials such as paper, fecal matter, trash, and animal parts, but it is unclear if decorations indicate an active burrow (Mealy 1997). The use of burrow video scopes, miniature video cameras mounted at the end of a feed line and viewed through a small monitor, are commonly used in determining burrow status. However, if there are sharp bends or obstructions in the burrow, the scope may not be able to reach the egg chamber. Therefore, the status of the burrow may not be determined unless completely excavated. Excavation entails gently digging from the entrance of the burrow by hand or trowel, a small section at a time, until reaching the end (FWC 2018). If eggs or flightless chicks are encountered in the process of excavation, the permittee is required to stop digging. Unfortunately, at that point it may not be possible to reconstruct the burrow, requiring the eggs or chicks to be transported to a wildlife rehabilitator.

This project had four chronology-related objectives: 1) to estimate the percentage of burrows in South Florida that became active before 15 February, 2) to identify the range of dates when nesting was initiated,

3) to estimate the percentage of burrows occupied by adult owls (when burrows are active vs. inactive) before 15 February, and 4) to estimate the percentage of decorated burrows that were active during the study period. The final objective of the project was to determine if the burrow lengths of Burrowing Owls in South Florida are similar to those in the published literature.

METHODS

We selected three study sites on the Florida Atlantic Coast: Florida Atlantic University in Boca Raton; Brian Piccolo Park in Cooper City, Broward County; and Central Broward Regional Park in Lauderhill, Broward County. The fourth study site was Marco Island in Collier County on Florida's Gulf Coast (Fig. 1). We included all known Burrowing Owl burrows found at each site in the survey and gave each a unique identification number. The FWC staff conducted the surveys in Palm Beach and Broward counties. The environmental scientist for the City of Marco Island conducted the scoping and surveys on Marco Island. Observers conducted surveys at intervals of 14 days or less, from 30 November 2007 to 14 February 2008. At each burrow, the observer recorded the location and behavior of adult owls present at the entrance and the condition of the burrow. Observers used a burrow scope to determine if adults, eggs, or chicks were present within the burrow. We considered burrows with adults present at the entrance to the burrow prior to our approach or inside the burrow to be occupied, regardless of whether the burrow was active. We scoped all burrows at the project sites at least once. We recorded the presence of burrow decorations around the entrance hole at each visit. The FWC buffer zone guidelines for the protection of burrows are in feet so we measured burrow lengths to the nearest six inches (15.24 cm) by marking the scope's feed line in six-inch increments.

RESULTS

We scoped a total of 89 burrows across all four sites. Of those burrows, 4.4% (n = 4) were active as defined by FWC during the study period (Table 1). Brian Piccolo Park contained two active burrows. One burrow contained five eggs on 3 January 2008 and two chicks on 1 February 2008. The second burrow contained three eggs and one chick on 25 January 2008. We recorded two other active burrows at Central Broward Regional Park. One burrow contained two eggs on 19 December 2007 and one chick on 1 February 2008. The second burrow contained two chicks on 11 January 2008, which means eggs were laid in December 2007. Florida Atlantic University and Marco Island did not have any active burrows during the study period. Forty-eight percent (n = 43) of the burrows surveyed were occupied; however, 90% of occupied burrows were inactive prior to 15 February (Table 1). Nineteen burrows had decorations at the entrance hole; however, only 5% (n = 1) of those burrows were active before 15 February. Decorations included foil, animal remains, animal scat, feathers, food wrappers, and assorted plastic debris. Burrow lengths

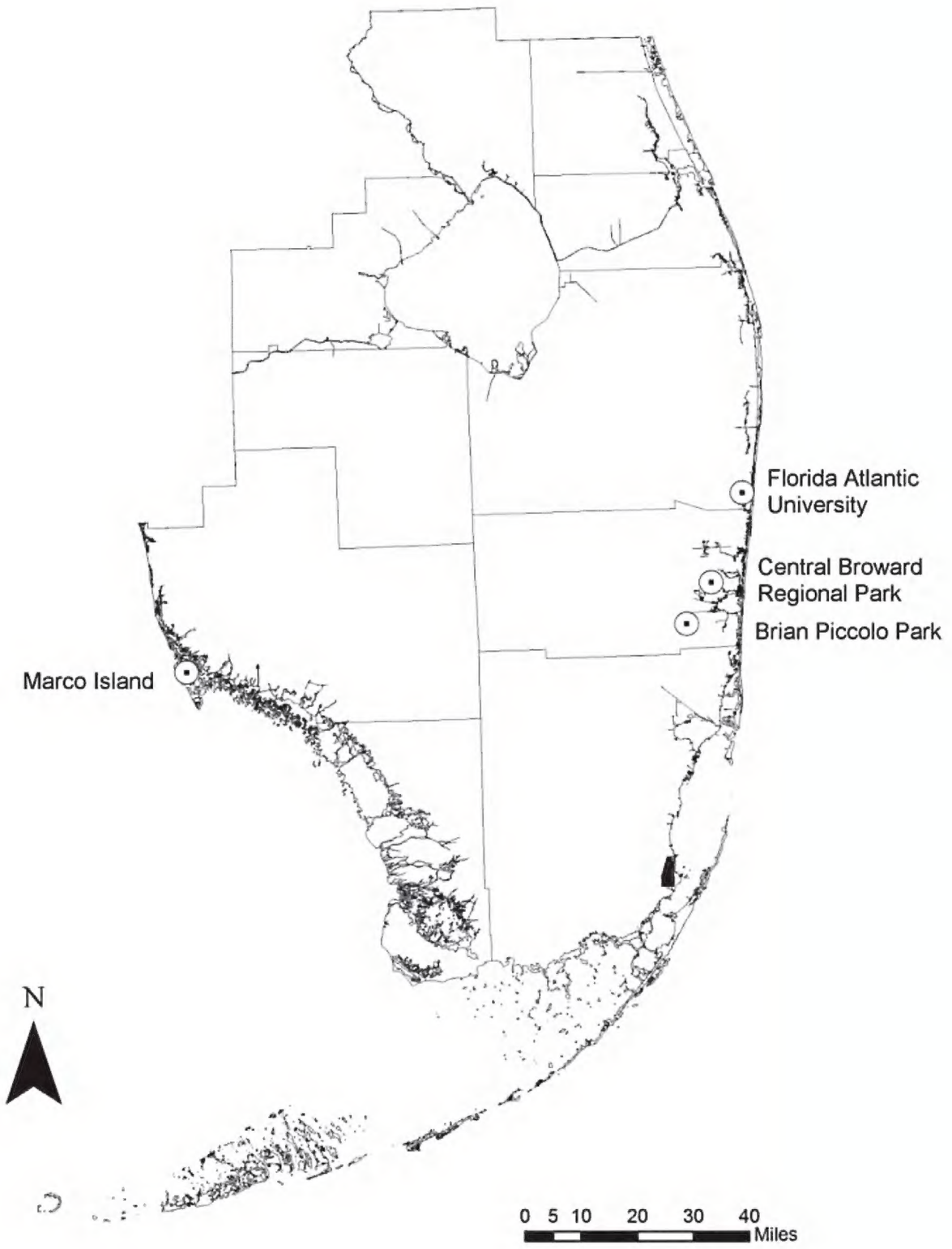

Figure 1. Burrowing Owl nesting phenology and occupancy study sites in South Florida, 2008–2009.

ranged from 0.3 m to 3.2 m with a mean length of 2.05 m for all sites combined (Table 1).

Discussion

Table 1. Number of occupied burrows, decorated burrows, active burrows, and length of Burrowing Owl burrows scoped at four sites in South Florida 30 November 2007 to 14 February 2008.

Site	*n*	Decorated	Occupied	Active	Mean length (m)	Range of lengths (m)
Florida Atlantic University	26	3	16	0	1.99	0.30–3.04
Brian Piccolo Park	16	9	16	2	1.98	1.52–3.20
Central Broward Regional Park	13	4	11	2	2.11	1.37–3.04
Marco Island	34	3	nd[a]	0	2.11	1.21–3.20
Total	89	19	43	4	2.05	0.30–3.20

[a] No data.

This study found less than a 5% probability of a burrow being active between 30 November and 14 February. Therefore, the risk of encountering an active burrow while conducting activities authorized by an FWC incidental take permit during this period is low. Results showed that occupancy and decorations are not good indicators of the status of a burrow.

Determining burrow status by using the presence of adults outside the entrance hole is not always a reliable method even if surveys are conducted for several days or multiple weeks. Similarly, the use of burrow decorations to assess burrow status is not always a reliable method. Although McKie (2003) found that owls at Florida Atlantic University decorated the entrance holes of burrows prior to egg-laying and incubation, there was no mention of how much time had elapsed between decoration and egg-laying. More research on the relationship between burrow decorations and nesting phenology is necessary before it should be used as a predictor of burrow status. Using a burrow scope to determine burrow status is also not foolproof. Burrowing Owls repeatedly retreated into the burrow when approached or were already inside the burrow before the scoping began. Further, the adults did not always flush out of the hole when the scopes were inserted, making it impossible to verify the contents of the burrow with the scope when the tunnel was blocked by one or more adults. At times, the scopes could not turn a corner inside the tunnel or the scope was blocked by rocks or other debris, making it difficult to reach the end to confirm burrow status. The most reliable method of determining burrow status when excavating a Burrowing Owl burrow for the purposes of clearing or construction is to use a combination of scoping and excavating a burrow, carefully starting from the entrance hole and working toward the end. These recommendations are consistent with FWC permitting guidelines. Finally, the average and maximum Burrowing Owl burrow lengths at these sites were consistent with the 2–3-m lengths found in other regions of Florida (Poulin et al. 2011) and the recommended buffer zones in the FWC permitting guidelines.

Acknowledgments

We thank Nancy Richie with the City of Marco Island for her assistance in the field. We also thank Broward County Parks and Recreation and Florida Atlantic University for permission to mark and scope the Burrowing Owls burrows on their properties. We also thank Dr. Thomas A. Webber and the editors of the Florida Field Naturalist for comments that improved the manuscript.

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FIRST WINTER RECORD IN FLORIDA OF THE GOLDEN-WINGED WARBLER (*Vermivora chrysoptera*)

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Over the past 25 years, we and others have documented in this journal the first winter records in Florida of 13 species of Neotropical migrants: Swallow-tailed Kite (*Elanoides forficatus*; Pranty et al. 2008); Common Nighthawk (*Chordeiles minor*; Pranty and Ponzo 2012); Eastern Kingbird (*Tyrannus tyrannus*; Bowman et al. 1995), Cliff Swallow (*Petrochelidon pyrrhonota*; Pranty and Ponzo 2012), Yellow-bellied Flycatcher (*Empidonax flaviventris*; Pranty and Ponzo 2013), Red-eyed Vireo (*Vireo olivaceus*; Pranty and Ponzo 2012), Blue-winged Warbler (*Vermivora pinus*; Pranty et al. 2005), Black-throated Blue Warbler (*Setophaga caerulescens*; Pranty et al. 2003), Black-throated Green Warbler (*S. virens*; Pranty 2000), Magnolia Warbler (*S. magnolia*; Pranty et al. 2005), Scarlet Tanager (*Piranga olivacea*; Pranty and Ponzo 2013), Rose-breasted Grosbeak (*Pheucticus ludovicianus*; Doyle 2002), and Bobolink (*Dolichonyx oryzivorus*; Pranty and Ponzo 2012). Here, we detail the discovery and documentation of the first Golden-winged Warbler (*Vermivora chrysoptera*; Fig. 1) occurring in Florida during the period 1 December–28/29 February, a bird that wintered in Palm Beach County.

Location.—Wakodahatchee Wetlands, at 13270 Jog Road in Delay Beach, Palm Beach County, Florida, is a human-created wetlands system that opened in 1996. The site is 20 ha in size and filters 2 million gallons of highly treated wastewater each day through a series of dikes, canals, and ponds (Palm Beach County 2018). The site has been planted primarily with native vegetation, including southern live oak (*Quercus virginiana*), cabbage palm (*Sabal palmetto*), and other trees, cycads, and shrubs in the uplands. A 1.2-km boardwalk and concrete path allow public access to the southern half of the site. This path and the abundant birdlife have made Wakodahatchee Wetlands a very popular birding site, with more than 5,500 checklists submitted to eBird through February 2020.

Discovery.—The Golden-winged Warbler at Wakodahatchee Wetlands was discovered along the concrete path between two boardwalk segments on 19 November 2018 by Justin Miller, who posted a message to the Tropical Audubon Society Miami Bird Board <http://www.tropicalaudubon.org/blog/bird-board>. Miller's post apparently included three photographs of the warbler, but these had been deleted within three months. The first two eBird reports of the warbler, each accompanied by diagnostic photographs that remain online, were from 25 November 2018 (Hamlin 2018, Lester 2018). The warbler continued to be reported to eBird from Wakodahatchee Wetlands throughout the winter, with the final photographic records on 11 March 2019 (Gles 2019, Groskopf 2019) and the final non-verifiable report on 16 March 2019 (Rapoza 2019). Between its first and last dates, the Golden-winged Warbler at Wakodahatchee Wetlands was reported to eBird for 23 days inclusive. The longest durations that the warbler was not reported to eBird were 21 days (13 December 2018–3 January 2019), 15 days (25 January–8 February 2019),

Figure 1. Female Golden-winged Warbler at Wakodahatchee Wetlands, Palm Beach County, Florida, on 9 February 2019. This individual, which wintered onsite, furnishes the first winter record of the species in Florida. Photograph by Bill Pranty.

and 11 days (28 February–10 March 2019).

Description and behavior.—The following description of the Golden-winged Warbler at Wakodahatchee Wetlands is based on our observations over ~10 minutes on 9 February 2019 as the warbler foraged 2–4 m above us in a group of oaks. The Golden-winged Warbler was a small, arboreal landbird about 13 cm in length. It foraged actively, often probing the undersides of clumps of leaves, in the manner of a Worm-eating Warbler (*Helmitheros vermivorus*). The Golden-winged Warbler had a yellow forehead and crown and grayish-black throat and ear patches bordered broadly by white, identifying it as a female. The wings were pale gray with a large yellow patch on the greater and median coverts. The underparts were white with gray flanks. The bill and irides were black, and the legs and feet were grayish with the underside of the feet pale yellowish. We heard a sharp *chip* note on two occasions. During our observation, the Golden-winged Warbler foraged in the company of several other small landbirds, namely Blue-gray Gnatcatcher (*Polioptila cerulea*), Black-and-white Warbler (*Mniotilta varia*), Northern Parula (*Parula americana*), Palm Warbler (*Setophaga palmarum*), American Redstart (*S. ruticilla*), Pine Warbler (*S. pinus*), Yellow-rumped Warbler (*S. coronata*), Yellow-throated Warbler (*S. dominica*), Prairie Warbler (*S. discolor*), and Northern Cardinal (*Cardinalis cardinalis*).

Status and distribution.—Golden-winged Warblers breed from southeastern Saskatchewan and southeastern Quebec south to southern Minnesota, northern Georgia,

and southern New York. They winter from Guatemala and Honduras south to Venezuela and Colombia, tending to arrive later in fall and departing earlier in spring than many other Neotropical migrants (Confer et al. 2011). Apparently Trans-Gulf migrants, Golden-winged Warblers generally migrate from the Mississippi River east to the Appalachian Mountains during both spring and fall (Confer et al. 2011). In Florida, the Golden-winged Warbler is a "rare to very rare transient in spring and fall over most of Florida, casual on e[ast] coast" (Stevenson and Anderson 1994:542) or a "regular, very rare to uncommon transient throughout, more frequent during fall" (Greenlaw et al. 2014:189). The verifiable range of dates in Florida based on specimen records is 7 April–5 May and 6 August–25 October (Stevenson and Anderson 1994). Non-verifiable observations extend beyond these dates, with one winter report in Lee County 11–29 February 1996 (Pranty 1996). Thus, the Golden-winged Warbler at Wakodahatchee Wetlands represents the first verifiable winter record in Florida. eBird shows two other wintering records in the United States: one male at Madera Canyon, Pima County, Arizona, on 22 December 2007 (Dionne 2007) and one female at Caw Caw Interpretive Center, Charleston County, South Carolina, on 8 February 2016 (McCullough 2016).

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OSPREY (*Pandion haliaetus*) DROWNS EASTERN GRAY SQUIRREL (*Sciurus carolinensis*)

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The Osprey (*Pandion haliaetus*) occurs on all continents except Antarctica and is known by several common names including the Sea Hawk, River Hawk, and Fish Hawk. All of these names allude to its fish-focused foraging habits. Fish make up about 99% of the Osprey's diet throughout its range (Hakkinen 1978, Cartron and Molles 2002, Silva e Silva and Olmos 2002, Beech 2003). The remainder of the diet is made up of various prey including mammals, birds, reptiles, amphibians, and invertebrates (Wiley and Lohrer 1973, Martins et al. 2011). After observing a pair of Ospreys catch rodents multiple times, Wiley and Lohrer (1973) suggested that inland populations of Ospreys may exploit alternative foods when they are abundant.

Ospreys are common on the campus of South Florida State College, Highlands County, Florida, which is situated between Lake Lelia to the north and Lake Glenada to the south. During the first week of May 2017, RB observed an Osprey on the campus grab an adult eastern gray squirrel (*Sciurus carolinensis*) from the trunk of a cabbage palm (*Sabal palmetto*) approximately 8 m tall. The squirrel struggled as the Osprey carried it about 100 m to Lake Glenada. The Osprey landed at the water's edge and held the squirrel under the water until it stopped moving. Then the Osprey carried the squirrel away, flying to the northeast until out of view. Because Ospreys nest in the area and have nestlings this time of year, and because the squirrel was not consumed directly, we suspect that it was delivered to a nest.

Ospreys, like other raptors, may consume their prey alive (Kenward 1990, Clancy 2005). Cupper and Cupper (1981) describe Ospreys delivering still thrashing fish to the nest on multiple occasions. To our knowledge, Gessner (2007) provides the only other reference to Ospreys drowning potential prey, a brief and second-hand reference to an "Osprey adult trying to drown a young bird."

Although Ospreys can eat their prey alive, there are several reasons they may kill it first. Still-living prey may struggle, making themselves difficult to grasp or cumbersome to carry in flight. Ospreys do occasionally drop struggling prey (Clancy 2005). Killing prey also would make it easier for naïve nestlings to consume. Cupper and Cupper (1981) recount an adult Osprey releasing a still-flopping fish at the nest, causing chaos as multiple startled young rushed to grab it. A live squirrel delivered to the nest could injure nestlings or escape.

The drowning RB observed may be a behavior to facilitate consuming these alternative, escape-prone foods. If drowning reduces the escape of air-breathing prey, we expect mammalian prey delivered to the nest, where the chance of escape is higher, to be drowned more frequently than mammals that are consumed directly. If inland Osprey populations are more likely to consume alternative foods when abundant, and thus are more experienced with non-fish prey than coastal Ospreys, we expect to see prey drowning more frequently in inland populations. This behavior also may be more common in human-modified landscapes, such as college campuses, where squirrels and other rodents are more abundant. Although Ospreys are fish specialists well adapted to their piscivorous lifestyle, they also may have adaptions or the behavioral flexibility to exploit other food sources.

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EXTRALIMITAL OCCURRENCES OF PALE-EYED BOAT-TAILED GRACKLES (*Quiscalus major*) IN CENTRAL FLORIDA

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Three subspecies of the Boat-tailed Grackle (*Quiscalus major*) are permanent, breeding residents in Florida: *Q. m. westoni* over most of the mainland; *Q. m. torreyi* along the northern Atlantic coast south to St. Augustine and Butler Beach, St. Johns County; and *Q. m. alabamensis* along the western Panhandle Gulf Coast east to Pace, Santa Rosa County, with one non-breeding record east to Panama City, Bay County (Stevenson and Anderson 1994, Cobb 2012, Post et al. 2014, Dailey and Dailey 2016, Pranty and Ponzo 2016). All sub-adult Boat-tailed Grackles, and all ages of *Q. m. westoni*, have brown irides, whereas the irides of adult *torreyi* and *alabamensis* are white or yellow (Post et al. 2014).

Stevenson and Anderson (1994:674–675) state that *torreyi* ". . . has occasionally been recorded south of the St. Johns River in winter" and that *torreyi* ". . . migrates somewhat farther south" of Duval County during fall. It is unclear whether these grackles reached central Florida as defined by Stevenson and Anderson (1994) and Greenlaw et al. (2014). We are aware of only two previous reports of pale-eyed Boat-tailed Grackles occurring in the central peninsula: one *torreyi* collected by William Brewster at Mellonville (a town later absorbed by Sanford), Seminole County, on 16 March 1877 (Museum of Comparative Zoology #201169; Stevenson and Anderson 1994); and one male *torreyi* banded at Magnolia Gardens, Charleston County, South Carolina, on 21 May 1986 that was recaptured "exhausted" at Daytona Beach, Volusia County, Florida, on 7 November 1987. This grackle was rehabilitated and released locally two days later after having traveled about 413 km from its banding site (Post 1994, Post et al. 2014). In this note, we report on photographic records of pale-eyed Boat-tailed Grackles in Volusia and Hernando counties, along central Florida's Atlantic and Gulf coasts, respectively.

Volusia County.—MB has discovered and photographed four separate pale-eyed Boat-tailed Grackles in Volusia County. On 23 January 2013 (Fig. 1) and 7 December 2013, MB found single males along the coast at Ponce de Leon Inlet. On 8 November 2014, MB found a single female at a dairy near Deleon Springs, a record that is especially significant because the location is about 40 km inland from the Atlantic Ocean. Finally, MB found a female at Shiloh Marsh, Merritt Island National Wildlife Refuge, on 26 March 2019; this establishes the southernmost record of a pale-eyed Boat-tailed Grackle along the Atlantic coast.

Hernando County.—BP discovered and photographed a pale-eyed female Boat-tailed Grackle among a flock of *westoni* gackles at Bayport Park, Bayport, on 9 December 2013 (Pranty and Dupuis 2013). This flock also traveled to Jenkins Creek Park and Linda Pedersen Park, two small, adjacent parks about 2.0 km to the southeast (e.g., Pranty and Gomez 2014). BP also found the pale-eyed Boat-tailed Grackle 3.75 km north of

Figure 1. Male Boat-tailed Grackle, presumably of the subspecies *torreyi*, at Ponce de Leon Inlet, Volusia County, Florida, on 23 January 2013. Photograph by Michael Brothers.

Bayport Park at Alfred A. McKethan Pine Island Park (e.g., Pranty and Fraser 2018). The lack of obvious size differences between this female and numerous female *westoni* Boat-tailed Grackles observed in direct comparison (BP and Tony Leukering pers. obs.) helped rule out the possibility that the Hernando County grackle was a Great-tailed Grackle (*Quiscalus mexicanus*), a species not yet recorded in Florida, but one that seems likely to stray to the state eventually.

Remarkably, what must have been the same pale-eyed female Boat-tailed Grackle returned to the Bayport area for the next three successive winter seasons. Although BP conducted only a few cursory searches for the grackle between April and October of each year, we considered it unlikely that it remained in the region year-round—but see the postscript. The range of dates of occurrence during the grackle's five winters in Hernando County, based on the few reports submitted to eBird by BP and other trustworthy observers, were 9 December 2013–30 January 2014, 16 November 2014, 4–27 December 2015 (Fig. 2), 9 November 2016–26 February 2017, and 5 November–19 December 2019. The Bayport area records appear to represent the first occurrences of a pale-eyed Boat-tailed Grackle along Florida's peninsular Gulf Coast.

Because *alabamensis* and *torreyi* Boat-tailed Grackles cannot be distinguished from one another except possibly from in-hand measurements (Post et al. 2014), we must presume which subspecies are represented in our photographs. The Volusia County records almost certainly represent *torreyi*, which breeds regularly within 100 km of the county (*alabamensis* is at least 575 km distant). The Hernando County records are problematic. The range of *alabamensis* is roughly 560 km northwest of the Bayport

Figure 2. Female Boat-tailed Grackle, of either the *torreyi* or *alabamensis* subspecies, at Bayport Park, Bayport, Hernando County, Florida, on 4 December 2015. Photograph by Bill Pranty.

area (presuming no trans-Gulf flight). The range of *torreyi* is much closer (roughly 230 km), but a crossing of the peninsula would be required to reach Hernando County. In addition to the two records listed above of pale-eyed Boat-tailed Grackles inland in the peninsula, we can add a third. Sam Ewing (2013) photographed a pale-eyed male Boat-tailed Grackle along the St. Johns River at James C. Godwin Riverfront Park, Palatka, Putnam County, Florida, on 10 April 2013. This grackle was about 40 km inland from the Atlantic Ocean. These three records, including one known to represent *torreyi*, suggest that a crossing of the Florida peninsula by *torreyi*, although unproven, seems possible.

The abundance and ordinariness of Boat-tailed Grackles in Florida, coupled with an overall disinterest in subspecies by most birders, undoubtedly cause few observers to closely examine Boat-tailed Grackles. As such, extralimital pale-eyed individuals may be more frequent than is known currently. We encourage birders to examine Boat-tailed Grackle flocks along the eastern Panhandle and in the peninsula and to report any pale-eyed individuals to eBird and ornithological groups.

Postscripts.— On the Aripeka–Bayport Christmas Bird Count held on 19 December 2018, BP, Don Fraser, and David Bowman found two pale-eyed female Boat-tailed Grackles among *westoni* grackles at Alfred A. McKethan Pine Island Park, Hernando County (Pranty and Fraser 2018). This second pale-eyed grackle (Fig. 3) suggests that perhaps the original pale-eyed female is now resident in Hernando County and has bred successfully at least once with a male *westoni* Boat-tailed Grackle. Also, on 29 October 2019, Steve Spenceley (2019) photographed a pale-eyed female Boat-tailed Grackle at Alfred A. McKethan Pine Island Park, proving that she remains in the area.

MB and John Murphy discovered a pale-eyed male Boat-tailed Grackle, probably *alabamensis*, at Apalachicola, Franklin County, on 15 December 2018. This record appears to establish the first record of a pale-eyed Boat-tailed Grackle from the eastern Panhandle.

Figure 3. Female-plumaged Boat-tailed Grackle at Alfred A. McKethan Pine Island Park, Hernando County, Florida, on 19 December 2019. This individual, with less-conspicuous pale irides compared to the female in Figure 2, may represent an intergrade between the female in Figure 2 and a male *westoni* Boat-tailed Grackle. Photograph by Bill Pranty.

Finally, along the Atlantic coast, MB has seen small groups of pale-eyed Boat-tailed Grackles at Vilano Beach, St. Johns County, and small numbers of pale-eyed grackles at Flagler Beach recently. These sightings suggest a southern expansion of *torreyi* in Florida.

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EXPANSION OF ROSEATE SPOONBILL BREEDING DISTRIBUTION IN SOUTHWEST FLORIDA

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Wading birds can be used as valuable ecological indicators in coastal ecosystems (Burger and Gochfeld 2004, Amat and Green 2009). Changes in their abundance and distribution can reveal insights about underlying patterns of environmental change, such as how the Roseate Spoonbill (*Platalea ajaja*) is used to monitor changes in Florida's Everglades ecosystem (Lorenz et al. 2009). Here, we report expansion in the breeding distribution of this species to new sites in southwest Florida. We documented the first nests in recent history for this area through routine rookery surveys. We discuss our findings in the context of population trends within the region based on publicly available data. These observations also contribute to ongoing assessments of shifts in the distribution of this indicator species.

The Roseate Spoonbill (hereafter spoonbill) is one of six spoonbill species worldwide and the only representative of the genus *Platalea* in the new world. It is designated as a Species of Special Concern in Florida, with poorly understood seasonal patterns and regional philopatry (Dumas 2000). Over recent decades, wading birds in the southern United States have been rebounding from human persecution during the later nineteenth and early twentieth centuries (summarized in Hodgson and Paul 2013, Kushlan 2018). Likewise, spoonbills were decimated in Florida mainly because of the plume trade and over-hunting. Into the early 1930s their numbers were so greatly reduced that only a small colony was known to persist in Florida at Bottle Key (Allen 1942), and breeding success in Florida Bay did not appear to rebound until the 1950s (Lorenz et al. 2002).

Field observations.— Broadly, nesting wading bird populations in Florida are used as indicators of environmental health. As such, colony patterns are carefully monitored with the aim of restoring historical nest numbers (SFWBR 1997–2017). Colonies are surveyed routinely in several southern parts of the state by government, non-profit, and academic partners. Results are collated in an annual assessment, the South Florida Wading Bird Report (SFWBR). Spoonbills have been monitored in Florida Bay since 1935 (Alvear Rodriguez 2001) and more recently tracked in the SFWBR since 2005. Based on these reports, the subtropical estuary of Florida Bay has been the major breeding location for spoonbills, with 90% of nesting occurring on mangrove islands within the boundaries of Everglades National Park (Bjork and Powell 1996, Lorenz et al. 2002).

As an example of regional monitoring efforts, wading bird colonies have been surveyed monthly throughout the nesting season since 2008 by trained staff of the Florida Department of Environmental Protection (DEP) in Estero Bay Aquatic Preserve, Lee County and in Charlotte Harbor Aquatic Preserves, Charlotte County

(Fig. 1). Surveys in both areas follow a direct count method as described by Paul and Paul (2004; see Clark and Leary 2013). Two observers surveyed each island by boat from a distance of 30–45 m, with a third person recording data. Observers recorded species and stage of breeding (i.e., incubating, chicks present, or unknown) at each nest encountered to measure nest counts and peak nesting effort. The primary observer stayed consistent except for staff change-overs, and trained volunteers conducted the secondary observer counts. They recorded the average of the two observers' counts (Lang 2018).

During this standard monitoring, nesting activity by spoonbills was detected in two parts of Estero Bay Aquatic Preserve where this species had not been recorded as breeding in prior surveys. Breeding activity was observed in Estero Bay during 2017 and 2018. First, a nest was observed on Coconut Point East Island (26.38411, –81.84905) in May 2017, and the pair fledged two chicks. In 2018, 4 chicks were documented during a survey at Hurricane Island (26.46812, –81.95352). These breeding records were documented in the 2017 and 2018 SFWBR annual reports. At Charlotte Harbor Aquatic Preserves, 3 nests were observed during 2018, and 2 were observed in 2019. The 2019 nests were observed at Oyster Creek (26.8181, –82.3359) and Gasparilla Marina (26.8269, –82.2625). Incubation occurred in April, and chicks were present in May and June (M. McMurray, personal communication).

Historical records.— To ascertain whether these nesting occurrences were indeed new for the region, we performed a detailed search of recent and historical records for evidence of any other breeding by this species in Estero Bay, our main study area. We compiled population trends dating back to the early 1950s in South Florida to create a baseline for comparison with current sightings. Sources that we consulted included spoonbill sightings in the publicly available database eBird (Cornell Laboratory of Ornithology 2018), the Florida Breeding Bird Atlas (FWC 2003), prior editions of the SFWBR (SFWBR 1997–2017), and other local researchers for further discussion.

Data plotted from the public database eBird show that spoonbill sightings are most frequent around Florida Bay, Estero Bay, and Lake Okeechobee (Fig. 1). There are many potential sources of bias in datasets generated by citizen science (Kosmala et al. 2016, Callaghan et al. 2017). For example, publicly reported records are not standardized for temporal or spatial effort and they are influenced by observer experience. However, our purpose in showing these compiled records is strictly to illustrate the coarse pattern of spoonbill occurrences in Estero Bay and adjacent areas, and not to infer relative abundance.

Our thorough search of available records confirmed that no prior spoonbill nesting has been documented in Estero Bay or Charlotte Harbor in recent times. Rookery data that Estero Bay Aquatic Preserve staff compiled from the 1970s (collected by Ted Below, Audubon), 1980s (collected by Robert Reppening), and 1990s (collected by Paul Hinchcliff) indicated that spoonbills were observed in the bay roosting and foraging but not nesting. A spoonbill expert confirmed that no prior nests have been reported in the area to their knowledge, although nesting likely would have occurred in what is now Lee County prior to the plume hunting era (J. Lorenz, personal communication). Our compilation of breeding records from SFWMD reports also illustrated how nesting counts in Florida Bay have declined over time (Fig. 2), concurrent with the timing of new breeding records in Estero Bay and Charlotte Harbor.

Potential implications.— Fluctuations in spoonbill population and breeding counts during recent history can provide an index of changing conditions in the coastal ecosystems of southern Florida. Indeed our observations are consistent with other recent findings of spoonbills in areas north of Florida Bay (e.g., Hodgson and Paul 2013). In part this could represent a return to historical nesting sites as populations rebound from prior persecution, such as observation from Chastant et al.

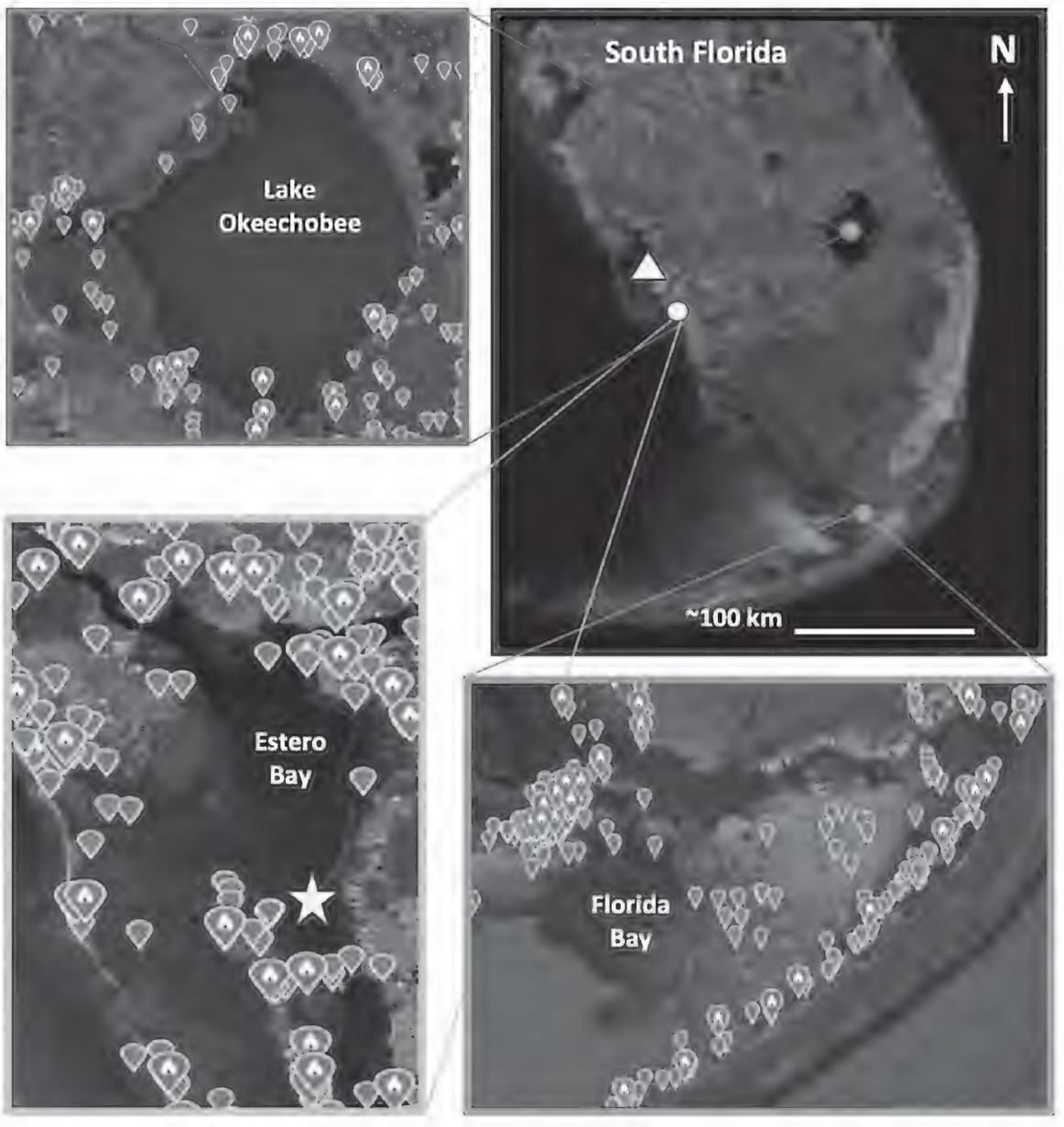

Figure 1. Areas in South Florida with the highest density of Roseate Spoonbill sightings, mapped using records obtained from the eBird database in May 2018 (Cornell Laboratory of Ornithology 2018). Maps are intended solely to illustrate distributions, and not for absolute comparisons; inset photos are not at an equivalent scale. The flame logo indicates hotspots, which are aggregate results for popular birding locations as designated in eBird. The bottom right inset shows sightings within historical nesting areas around Florida Bay. The top left inset shows sightings around Lake Okeechobee. The bottom left inset shows sightings within the main study area of Estero Bay. The star indicates the approximate location of a Roseate Spoonbill nest at Hurricane Island in the Estero Bay Aquatic Preserve, Lee County and the triangle indicates the location of Charlotte Harbor Aquatic Preserves farther north.

(2015) of the first spoonbill breeding on Lake Okeechobee since the 1870s. Another possible explanation could be range shifts to new areas as wading birds adapt to environmental change. Media reports from summer 2018 documented observations

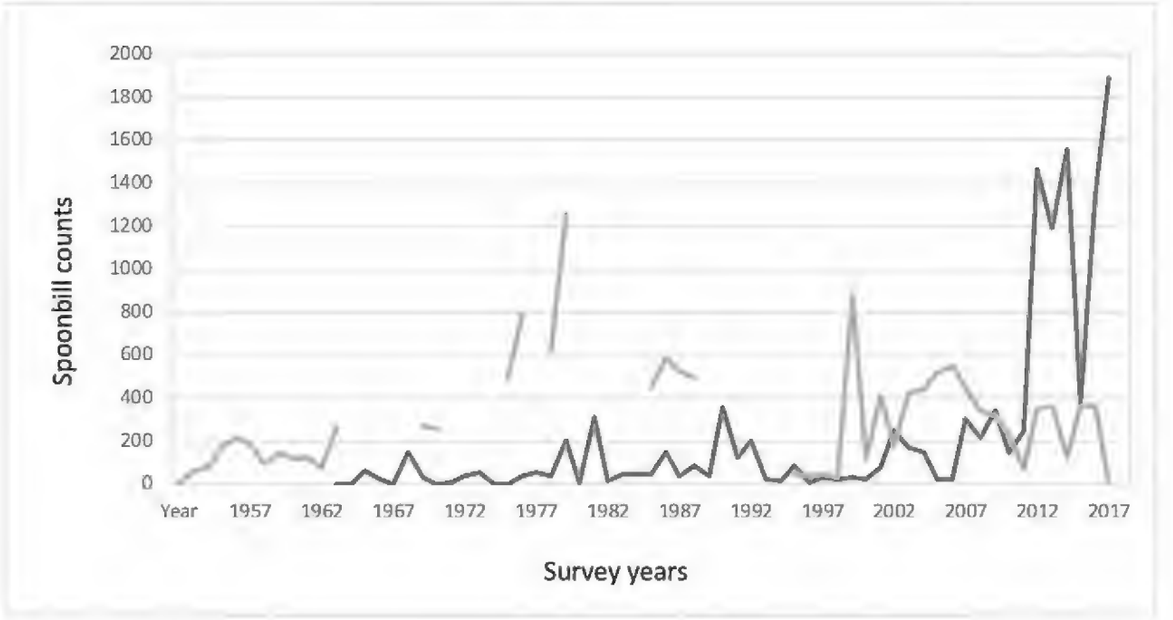

Figure 2. Observations of Roseate Spoonbill individuals (dark line) and nests (light line) in Florida Bay from 1953 to 2017. We obtained data from citizen sightings in eBird, and nesting records from South Florida Wading Bird Reports. Note that there are many potential sources of bias in datasets generated by citizen science, such as increased effort over time and other factors discussed in the main text of this paper.

of spoonbills in unexpected northern locations including Maine and Quebec (Minor 2018). All of these changes are consistent with the fact that water-level fluctuations in Florida Bay and the Keys influence the abundance of spoonbill nests (Lorenz 2014), and with data that suggest a decline in the environmental conditions of Florida Bay (Lorenz and Becker 2017). Overall, the result is that spoonbill nesting in Florida Bay appears to be negatively affected as sea level rise in the Keys is increasing water levels in primary spoonbill foraging areas (Lorenz et al. 2018).

Whether this suite of observations captures a distributional shift or merely a fluctuation will be confirmed only by a longer time series of data into the future. Possible shifts in the breeding distribution of this species do seem to parallel changes in the conditions of wetlands, although the precise drivers of the distributional changes are beyond the scope of this paper. Responses could be due to combinations of habitat loss, sea level rise, and changes in food availability. These are compelling avenues for future research in the context of global change during the Anthropocene, and will require collaborative and interdisciplinary efforts by the scientific community. Population dynamics of wetland and coastal birds thus continue to be an important research need in South Florida, including an understanding of how water management policies influence the breeding success of wading birds.

Acknowledgments

We are grateful for the efforts of Florida's DEP and all observers who contribute data to the annual South Florida Wading Bird Reports and eBird. Thanks to Mary McMurray for discussing her field observations, and to Dr. Jerome Lorenz for discussions about the historical context of spoonbill distributions. Dr. Frank Moore and three anonymous reviewers provided constructive feedback that improved this manuscript.

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FIELD OBSERVATIONS

Summer Report: June–July 2019.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Electronic submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December–February), spring (March–May), summer (June–July), and fall (August–November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers follow this report.

Sight-only observations are considered "reports," whereas only those observations supported by verifiable evidence (photographs, video or audio recordings, or specimens) are called "records." Species for which documentation is required by the FOC and by the FOS Records Committee (FOSRC; < http://www.fosbirds.org/florida-bird-list.html >) are marked here with an asterisk (*). A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations in this report are: AFB = Air Force Base, AFR = Air Force Range, EOS = end of season, m. obs. = many observers, NERR = National Estuarine Research Reserve, NP = National Park, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, SF = State Forest, SP = State Park, STA = Stormwater Treatment Area, STF = sewage treatment facility, WMA=Wildlife Management Area, and N, S, E, W, etc., for compass directions. Bold-faced entries denote birds newly reported or verified in Florida, or record numbers. +Photographs or video- or audio-recordings archived by the FOC are identified by a plus (+).

Summary of the Summer Season

State review species in this report include an **Antillean Palm-Swift,** a Neotropic Cormorant, two Yellow-green Vireos, a **Red-legged Thrush**, one Bahama Mockingbird, and a Black-faced Grassquit.

Species Accounts

Black-bellied Whistling-Duck: 3 at Bald Point (*Franklin*) 24 Jun (M. Forehand); 1 at Kanapaha Prairie (*Alachua*) 26 Jun (L. Hensley); 29 at Rabon Road (*Jefferson*) 29 Jul (M. Smith).

Canada Goose: Up to 7 at Archer (*Alachua*) 18–20 Jun (S. Ewing, D. Ewing et al.).

Mallard: 1 at Orlando Wetlands Park (*Orange*) 22 Jun (M. Keim).

Mottled Duck: 1 at Lake Apopka North Shore (*Lake*) 1–22 Jun (G. Green); 1 at Lake Mineola Pier (*Lake*) 2 Jul (D. Rowland).

Ring-necked Duck: 1 female (continuing from spring report) at Lake Apopka Wildlife Drive (*Orange*) 2 Jun–28 Jul (m. obs.).

Common Eider: 1 (continuing from spring report) at Ponce Inlet (*Volusia*) 3–20 Jun (m. obs.).

Surf Scoter: 3 at Huguenot Memorial Park (*Duval*) 3 Jun (+J. Martin); 1 at Navarre (*Santa Rosa*) 12 Jun (R. Guerra).

Ruddy Duck: 1 at Lake Apopka Wildlife Drive 4–7 Jul (+B. Taylor).

American Flamingo: 1 at Saint Marks NWR (*Wakulla*) 1 Jun–3 Jul (D. Morrow).

Smooth-billed Ani: 1 at Schofield Road (*Lake*) 28 Jun (J. Ballard).

Antillean Nighthawk: 1 at Grassy Key (*Monroe*) 17 Jul–EOS (m. obs.).

*Antillean Palm-Swift: 1 at Grassy Key, MM 58 (*Monroe*) 15–24 Jul (S. Wilkerson, D. Wilkerson, +L. Manfredi).

King Rail: 1 at Walnut Hill (*Escambia*) 8 Jun (J. Yuhasz).

Gray-headed Swamphen: 1 at Lake Apopka Wildlife Drive 7 Jun–14 Jul (K. Rigling).

Purple Gallinule: 5 including 1 chick at Green Cove Springs (*Clay*) 22 Jun (M. Fethe).

Common Gallinule: 75 at International Paper Wetlands (*Escambia*) 14 Jun (J. Callaway, B. Callaway).

Piping Plover: 1 at Cocoa Beach (*Brevard*) 6 Jun (D. Welsh); 1 at Cherie Down Park (*Brevard*) 6 Jun (+S. K. Jones); 1 at Jetty Park (*Brevard*) 9 Jun (P. Mansfield); 1 at Sebastian Inlet District Sand Bypassing Project Fill Area (*Indian River*) 22 Jul (N. Desjardin).

Dunlin: 1 at Outback Key (*Pinellas*) 10 Jun (+K. Duncan).

Least Sandpiper: 2 at Orlando Wetlands Park 9 Jul (B. Asteriades).

White-rumped Sandpiper: 1 at Flag Island (*Franklin*) 8 Jul (M. Lauzau, J. Murphy).

Semipalmated Sandpiper: 1 at Gainesville (*Alachua*) 1–2 Jun (S. Ewing et al.).

Spotted Sandpiper: 1 at Sweetwater Wetlands Park (*Alachua*) 1 Jun (S. Ewing et al.); 1 at Sweetwater Wetlands Park 15 Jul (R. Rowan, T. Anderson).

Greater Yellowlegs: 1 at Orlando Wetlands Park 14–30 Jun (+L. Gray).

Willet: 1 at Sweetwater Wetlands Park 4 Jul (H. O'Malley, P. Singh).

Wilson's Phalarope: 1 at Bayport (*Hernando*) 2 Jun (S. Spenceley, K. Rosse).

Red-necked Phalarope: 1 offshore Port Canaveral (*Brevard*) 2 Jul (M. Brothers).

Parasitic Jaeger: 1 at Pensacola Beach (*Escambia*) 4 Jul (D. Muth).

Lesser Black-backed Gull: 1 sub-adult at Gandy Beach (*Pinellas*) 3 Jul (+A. Ruben).

Black Noddy: 1 at Bush Key, Dry Tortugas NP (*Monroe*) 1–29 Jun (m. obs.).

Sooty Tern: Up to 2 offshore Bethel Shoal Buoy (*Indian River*) 9, 15 Jun (W. Johnson); up to 4 offshore Port Canaveral 2 Jul (S. Collins); 2 at old Saint George Island Causeway (*Franklin*) 8 Jul (M. Lauzau, J. Murphy).

Bridled Tern: Up to 3 offshore Bethel Shoal Buoy 9 and 15 Jun, and again 2 Jul (W. Johnson); up to 5 offshore Port Canaveral 2 Jul (S. Collins).

Least Tern: 1 at Gainesville (*Alachua*) 15 Jul (J. Mays).

Gull-billed Tern: 1–2 at Gandy Beach 9–26 Jul (+D. Love).

Black Tern: 40 at Flag Island (*Franklin*) 8 Jul (M. Lauzau, J. Murphy).

Roseate Tern: 1 at Smyrna Dunes Park (*Volusia*) 20 Jun (+M. Brothers).

Arctic Tern: 1 at Willie Bud Way (*Indian River*) 1 Jun (G. Mina).

Royal Tern: 2 at Newnans Lake (*Alachua*) 11 Jun (S. Ewing).

Black Skimmer: 2 at Lake Apopka Wildlife Drive 5 Jul (E. Kershner).

White-tailed Tropicbird: 2 offshore Port Canaveral 2 Jul (S. Collins).

Common Loon: 1 at Fort De Soto Park (*Pinellas*) 1 Jul (+P. Plage).

Cory's Shearwater: 16 offshore Bethel Shoal Buoy 15 Jun (W. Johnson).

Great Shearwater: 1 offshore Bethel Shoal Buoy 15 Jun (W. Johnson); 2 at Gulf of Mexico 35 miles south of Alligator Point (*Franklin*) 23 Jul (J. Murphy).

Audubon's Shearwater: 1 offshore Port Canaveral 2 Jul (S. Collins).

Wilson's Storm-Petrel: Up to 20 offshore Port Canaveral 2 Jul (S. Collins); up to 3 offshore Bethel Shoal Buoy 9 and 15 Jun, and 2 Jul (W. Johnson); 2 offshore Ponce Inlet 18 Jun (M. Brothers).

Band-rumped Storm-Petrel: 1 taken to Wildlife Sanctuary of NW FL (*Escambia*) 23 Jun (*fide* D. Kaufmann); 2 offshore Port Canaveral 2 Jul (S. Collins).

Masked Booby: 1 at Beverly Beach (*Flagler*) 26 Jun (+B. Zimmermann); 1 offshore Bethel Shoal Buoy 2 Jul (W. Johnson); 1 at Destin (*Okaloosa*) 17–21 Jul (E. Bodker, B. Purdy).

Brown Booby: 1 at Peninsular Drive (*Volusia*) 10–13 Jun (+M. Brothers); 1 at Cherie Down Park 10 Jun (+S. K. Jones).

Neotropic Cormorant: 1 at Peninsular Drive 10 Jun (+M. Brothers).

Double-crested Cormorant: 1 at Gulf Breeze (*Santa Rosa*) 8 Jun (L. Duncan); 1 at Gulf Breeze 26 Jul (B. Duncan).

American White Pelican: 1 at Paynes Prairie Preserve SP (*Alachua*) 27 Jun (D. Mickelson, B. Shea).

Brown Pelican: 3 at Newnans Lake 11 Jun (S. Ewing); 1 at Paynes Prairie Preserve SP 16–17 Jul (D. Mickelson, M. Manetz).

Least Bittern: 58 at International Paper Wetlands 14 Jun (J. Callaway, B. Callaway).

Yellow-crowned Night-Heron: 1 at Miccosukee Land Cooperative (*Leon*) 30 Jun (B. Phelan).

White-faced Ibis: 1 at Lake Apopka North Shore 1 Jun (G. Green).

Roseate Spoonbill: Up to 6 at Sweetwater Wetlands Park 14–28 Jun (M. Drummond. T. Hardin et al.); 8 at Dickerson Bay (*Wakulla*) 17 Jun (D. Bryan).

Snail Kite: Up to 55 nests at Paynes Prairie Preserve SP (*fide* C. Poli); 1 juvenile at Orlando Wetlands Park 9, 29–30 Jun (+J. Gammon); 1 female at Lake Apopka Wildlife Drive 15–27 Jun (+B. Taylor).

Mississippi Kite: 13 at Walker and Sons Dairy (*Jefferson*) 28 Jul (M. Smith, R. Emond, A. Smith).

Sharp-shinned Hawk: 1 at Tallahassee (*Leon*) 2 Jun (J. Cavanagh); 1 at Avalon Beach (*Santa Rosa*) 14 Jun (L. Duncan).

Broad-winged Hawk: 1 at Owl Creek Road (*Franklin*) 4 Jun (J. Murphy).

Short-tailed Hawk: 7 at *Alachua* during the season (S. Ewing, D. Ewing et al.); 1 at Mandarin Park (*Duval*) 22 Jun (*fide* K. Dailey); 1 at Curry Ford Road (*Orange*) 9 Jun (B. Cammarano); 1 at Lake Woodruff NWR (*Volusia*) 9 Jun (D. LaGrange); 1 at Wekiva Springs SP (*Orange*) 11 Jun (K. Hamblett); 1 at River Chase Way (*Volusia*) 12 Jun (M. Brothers); 1 at Orlando Wetlands Park 15, 30 Jun (K. Hamblett).

Barn Owl: 1 at Molino (*Escambia*) 3 Jul (J. Yuhasz).

Burrowing Owl: 2 (continuing from spring report) at Orlando Melbourne International Airport (*Brevard*) 13–15 Jun (m. obs.).

Barred Owl: 4 at Tallahassee 1 Jun–EOS (S. Phillips).

Belted Kingfisher: 3 at *Alachua* 4–26 Jun (S. Ewing, D. Ewing, C. Cattau); 1 at Bald Point SP (*Franklin*) 5 Jul (J. Murphy); 1 at Orlando Wetlands Park 22 Jun and 12 Jul (M. Keim); 1 at De Leon Springs SP (*Volusia*) 26 Jun (D. Richard).

Hairy Woodpecker: 1 at Big Cypress National Preserve (*Monroe*) 7 Jul (N. Salino, J. Montes de Oca); 1 at Clearwater Lake Recreation Area (*Lake*) 7 Jul (+A. Hull).

Peregrine Falcon: 1 at Jones East Trailhead, Little Big Econ SF (*Seminole*) 17 Jun (L. Lilja); 1 at Tierra Verde (*Pinellas*) 14 Jul (M. Burns).

Acadian Flycatcher: 1 at Lake George Boat Ramp (*Lake*) 27 Jun (D. Richard).

Great Crested Flycatcher: 5–7 pair nested successfully at W Gulf Breeze Jun–Jul (B. Duncan).

Tropical/Couch's Kingbird: 1 at Guana River WMA (*St. Johns*) 4 Jun (+C. Elder).

Gray Kingbird: 2 at Saint George Island (*Franklin*) 25 Jul (J. Murphy).

Scissor-tailed Flycatcher: 1 at Fort Pickens (*Escambia*) 25 Jul (L. Duncan).

*Yellow-green Vireo: 1 at Gulf Breeze 2 Jun (B. Duncan, L. Duncan); 1 male singing at Crocodile Lakes WMA (*Monroe*) 7 Jun–EOS (+L. Manfredi).

Black-whiskered Vireo: 1 at Gulf Breeze 1 Jun (S. Duncan, B. Duncan, L. Duncan); 1 at 20th Avenue, Vero Beach (*Indian River*) 21 Jun (G. Mina).

*Pied Crow: 1 at Jones East Trailhead, Little Big Econ SF 13 Jun–10 Jul (+G. Williams).

Tree Swallow: 1 at Paynes Prairie Preserve SP 1 Jun (R. Rowan et al.); 3 at Eastman/Taminco Sanctuary (*Santa Rosa*) 24 Jul (L. Kelly, B. Furlow); 1 at Gulf Breeze 24 Jul (B. Duncan); 6 at Upper Quail Lakes Trail (*Volusia*) 15 Jun (R.E. Peterson); 1 at Lake Apopka Wildlife Drive 4–13 Jul (S. Mary); 1 at Orlando Wetlands Park 12 Jul (K. Hamblett).

Bank Swallow: 2 at Paynes Prairie Preserve SP 1–27 Jun (R. Rowan et al.); 1 at Saint Marks NWR 26 Jul (D. Morrow).

Cave Swallow: 1 at Lake Apopka Wildlife Drive 16 Jun (K. Hamblett).

White-breasted Nuthatch: 4 at Tallahassee 1 Jun–EOS (S. Phillips).

Wood Thrush: 1 at Tallahassee 7 Jun (D. Bryan); 1 at Robie Avenue (*Lake*) 22 Jul (F. Mealo).

American Robin: 1 at Gainesville to 7 Jul (G. Parks et al.).

*Red-legged Thrush: 1 at South Pointe Park (*Miami-Dade*) 26–30 Jun (F. Schena; m. obs.).

Gray Catbird: 2 at Gainesville 11 Jun–29 Jul (T. Greenberg, M. Kalinowski et al.); 1 at Spring Hill (*Alachua*) 18–20 Jun (S. Spenceley); 1 at Wildwood (*Sumter*) 18 Jun (W. Milstein).

*Bahama Mockingbird: 1 at Bill Baggs Cape Florida SP (*Miami-Dade*) 10 Jul (m. obs.).

American Goldfinch: Up to 5 at *Alachua* during the season (P. Stine, S. Ewing et al.); 1 at NE St. Petersburg (*Pinellas*) 4 Jul (+J. Clayton).

Louisiana Waterthrush: 1 at Gainesville 8 Jul (B. Ewing); 1 at Brooker Creek Preserve (*Pinellas*) 20 Jul (+T. Mast); 1 at Largo Central Park NP (*Pinellas*) 25–27 Jul (K. Duncan); 1 at John Taylor Park (*Pinellas*) 27 Jul (S. Aversa).

Northern Waterthrush: 1 at Gulf Breeze 23 Jul (B. Duncan, L. Duncan).

Black-and-white Warbler: 1 at San Felasco Hammock (*Alachua*) 6 Jul (C. Anderson); 1 at Alligator Point 9 Jul (J. Murphy); 1 at John Chesnut Park (*Pinellas*) 11 Jul (D. Love); 1 at Audubon Park (*Volusia*) 11 Jul (R. Wise); 1 at War Veteran's Park (*Pinellas*) 16 Jul (+A. Ruben); 1 at Philippe Park (*Pinellas*) 16 Jul (+T. Mast); 1 at Brooker Creek Preserve 20 Jul (T. Mast); 1 at George C. McGough Park (*Pinellas*) 26 Jul (S. Aversa); 1 at Sawgrass Lake Park (*Pinellas*) 27 Jul (J. Clayton).

Prothonotary Warbler: 1 at Philippe Park 16 Jul (+T. Mast); 1–3 at Sawgrass Lake Park 27–31 Jul (+J. Clayton, J. Ficken); 1 at John Bonner Park (*Pinellas*) 26 Jul (S. Aversa); 9 at John Chesnut Park 27 Jul (+T. Mast).

Swainson's Warbler: 1 at Miccosukee Land Cooperative 20 Jun–10 Jul (B. Phelan).

Connecticut Warbler: 1 offshore Bethel Shoal Buoy 2 Jul (+W. Johnson).

Kentucky Warbler: 1 at Tallahassee 1–27 Jun (J. Cavanagh).

Hooded Warbler: 1 at mid-St. Petersburg 30 Jul (E. Haney); 1 at Largo Central Park NP 31 Jul (K. Duncan).

American Redstart: 1 at Newnans Lake 12 Jul (A. Kent, B. Ewing, S. Ewing); 1 at Alligator Point 25 Jul (J. Murphy); 1 at John Chesnut Park 26 Jul (+T. Mast); 1 at NE St. Petersburg 26 Jul (E. Plage); 1 at Sawgrass Lake Park 27 Jul (J. Clayton).

Yellow Warbler: 1 at Orange Lake (*Alachua*) 23 Jul (R. Rowan, M. Manetz, D. Segal).

Blackpoll Warbler: 1 offshore Port Canaveral 2 Jul (S. Collins).

Prairie Warbler: 1 at Paynes Prairie Preserve SP 21 Jul (F. Lee).

Yellow-breasted Chat: Up to 2 at Guana River WMA (*St. Johns*) 15–26 Jun (C. Elder, D. Reed et al.).

*Black-faced Grassquit: 1 at Blue Hole, Big Pine Key (*Monroe*) 21 Jul–EOS (m. obs.).

Bachman's Sparrow: 5 at Apalachicola National Forest (*Franklin*) 4 Jun (J. Murphy).

Rose-breasted Grosbeak: 1 at Gulf Breeze 28–29 Jun (B. Duncan, L. Duncan).

Dickcissel: 15 at Gulf Breeze 27 Jun (B. Duncan).

Bobolink: 1 at Honeymoon Island SP (*Pinellas*) 2 Jun (+M. James); 1 at Saint Marks NWR 6 Jul (D. Morrow).

Boat-tailed Grackle: 1 at Miccosukee Land Cooperative 21 Jun (B. Phelan).

Shiny Cowbird: 1 male at W St. Petersburg 11 Jun (+P. Plage); 1 at Saint Marks NWR 6 Jul (D. Morrow).

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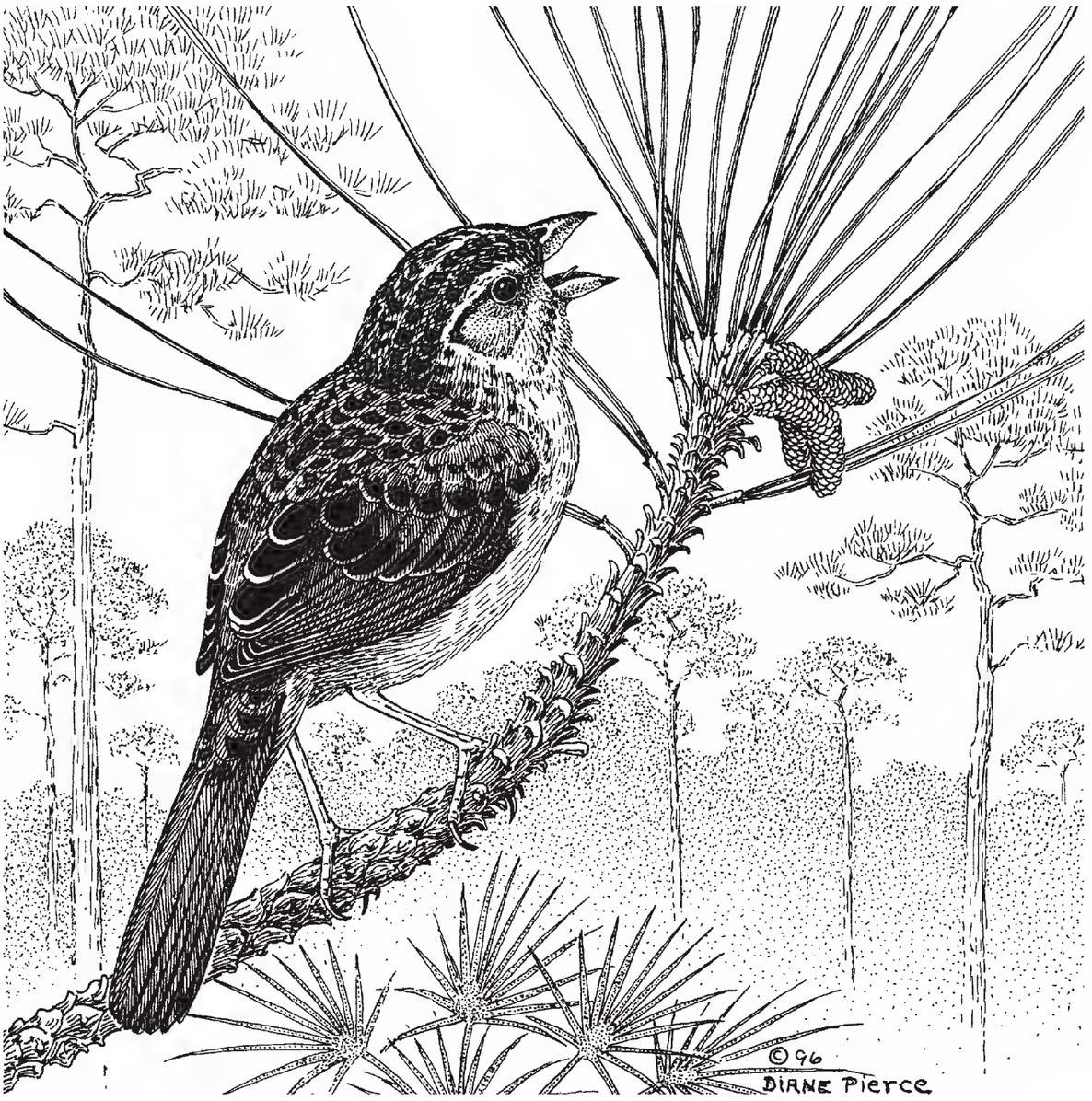

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(3) include capitalized standard English names for all birds, but lower case for English names of other organisms;

(4) use metric units for all measurements;

(5) use the form "7 June 2003" for all dates;

(6) use the 24-hour clock for all indications of time (e.g., 0800, 1400);

(7) use the following abbreviations: s (second), min (minute), h (hour);

(8) use active voice where at all possible.

Submit manuscripts, and books for review, to the Editor, Scott Robinson. Field observations should be sent to a regional compiler of the Field Observations Committee (see Field Observations, this issue, and http://www.fosbirds.org/records-observations.html). Reports of birds for which the FOS Records Committee requires documentation (see http://www.fosbirds.org/rarebirdreports.html) should be sent to the Secretary of the Committee, Andrew W. Kratter, Florida Museum of Natural History, P.O. Box 117800, Gainesville, FL 32611-7800; Email: kratter@flmnh.ufl.edu.

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POPULATION TRENDS IN THE EXOTIC RED-MASKED PARAKEET (*Psittacara erythrogenys*) IN SOUTHERN FLORIDA

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Abstract.—The Red-masked Parakeet (*Psittacara erythrogenys*) was introduced into south Florida in 1986 and has since expanded its population and range. We examined these trends using data from the Cornell Lab of Ornithology's eBird project and the National Audubon Society's Christmas Bird Counts over the past 15 years. The results suggest that after a period of rapid growth, population size has remained relatively level since 2011. The Red-masked Parakeet in south Florida exhibits characteristics of an established invasive species.

Key words: Florida, invasive species, population trends, Red-masked Parakeet

INTRODUCTION

Florida's introduced avifauna includes more than 50 species of parrots and parakeets (Greenlaw et al. 2014). Only four of these have so far become numerous and persistent enough to have been considered established as breeding populations in the state (Greenlaw et al. 2014). The Red-masked Parakeet (*Psittacara erythrogenys*) is a small parrot native to southern Ecuador and northern Peru (Best et al. 1995). From 17,000 to 30,000 individuals were imported into the United States for the pet trade between 1983 and 1985 (Best et al. 1995). The species was first officially recorded in Florida when 30 individuals were counted on the 1989 Dade County Christmas Bird Count (CBC) in Miami (National Audubon Society 2010). Though James (1997) considered the population unlikely to persist through the 1990s, the Miami population

has since expanded in population size and range. A second population is now established in Fort Lauderdale, reaching 355 birds in 2004 (Pranty and Epps 2002; S. Epps, pers. obs.).

Breeding populations of Red-masked Parakeets in Florida exhibit long-term fidelity to specific sites and show solitary and colonial breeding strategies (eBird Basic Dataset 2019; S. Epps, pers. obs.). Red-masked Parakeets are secondary cavity nesters and will also nest in live royal palms (*Roystonea regia*) in Florida (Diamond and Ross 2019, Epps 2007)

Investigators often monitor population trends of exotic parrots (Runde et al. 2007, Pârâu et al. 2016, Uehling et al. 2019). Some species are considered crop pests (*Amazona* spp.), disease carriers, or competitors with native species (Pithon and Dytham 1999, Runde et al. 2007). Red-masked Parakeets have been monitored for conservation (Chavez-Riva 1994) and to determine the extent to which they have become established in a given location (Pranty and Epps 2002, Runde et al. 2007). Monitoring efforts have largely relied on annual CBC data from urbanized areas (Pranty and Epps 2002, Runde et al. 2007). The CBC is also useful for monitoring range expansion as is the Cornell Lab of Ornithology's eBird citizen science project. We applied a combination of statistical and descriptive geospatial analyses to describe population trends and range expansion of the Red-masked Parakeet, and evaluated its current status in Florida.

Methods

Collection of data and nesting reports.—We collected data on distribution, numbers, and breeding status from eBird's Basic Dataset (2019), CBCs, primary literature, and personal observations. Christmas Bird Counts provide a consistent methodology for tracking species counts in an area and have been used previously to monitor invasive parrot populations (Pranty and Epps 2002, Runde et al. 2007). We used data from three CBCs: Dade County, Fort Lauderdale, and Kendall. More recently, eBird has also been used to monitor invasive species, including parrots (Uehling et al. 2019).

We edited raw, georeferenced eBird data to remove redundant records and converted them to a geographic information system shapefile for use in ArcMap 10.1 (Esri, Redlands, CA, USA). We filtered this data to find verified reports of nesting Red-masked Parakeet and supplemented these data with Diamond and Ross (2019), Pranty and Epps (2002), and personal observations from the second author. Because of the lack of historical data in eBird before 2003 and issues with the identification of *Psittacara* before 2000, we restricted our analysis to 2004–2018.

The count circle data provided by the National Audubon Society are pooled by state and include bird counts and party-hours spent. We performed two regression analyses: one with year as a predictor of count, and the second using party-hours as a covariate to correct for effort. We calculated both R^2 values to determine whether the addition of the covariate explained the variation in the raw count data. No correction was possible for the eBird data.

Analysis of overall population trends.—Using eBird, Pranty and Epps (2002), and our personal observations, we determined the greatest number of Red-masked Parakeets counted from a single report in each year from 2004–2018 (Table 1). Unlike pooled CBC data, these point counts do not need to be corrected for effort. We compared the CBC and yearly

Table 1. Yearly single high count of Red-masked Parakeets in Florida.

Year	High count	Locality	County	Date
2000	53	Las Olas Isle	Broward	17 Dec 2000
2001	36	Nurmi Isle	Broward	8 Nov 2001
2002	65	Navrro Isle	Broward	13 Nov 2002
2003	120	Coconut Isle	Broward	1 Jan 2003
2004	355	Las Olas Isle	Broward	19 Dec 2004
2005	18	Ft. Lauderdale Hampton Inn	Broward	5 Nov 2005
2006	2	Matheson Hammock Park	Miami-Dade	29 Apr 2006
2007	60	Matheson Hammock Park	Miami-Dade	12 Dec 2007
2008	15	18th Court Neighborhood, Ft. Lauderdale	Broward	29 Sep 2008
2009	75	NW 2nd Avenue and Garden Drive	Miami-Dade	17 Jan 2009
2010	30	Matheson Hammock Park	Miami-Dade	15 Jan 2010
2011	280	Las Olas Isle	Broward	29 Jan 2011
2012	62	Hollywood Lakes	Broward	14 Nov 2012
2013	51	Matheson Hammock Park	Miami-Dade	11 Jan 2013
2014	80	Miller Roost	Miami-Dade	23 Mar 2014
2015	70	Golden Glades	Miami-Dade	19 Nov 2015
2016	80	Miller Roost	Miami-Dade	20 Apr 2016
2017	150	SW 16th Street and 82nd Avenue	Miami-Dade	17 Mar 2017
2018	80	82nd south of 8th Street	Miami-Dade	16 Oct 2018

high counts using a two-sample *t*-test for significant difference. This allowed us to determine if the covariate correction truly explained the observed pattern.

Using a spatial methodology similar to the one employed by Davis et al. (2011), we used ArcGIS (Esri, Redlands, CA, USA) to group eBird data to match the period of CBC counts and extracted the corresponding population data. This provided an approximation of the population during the same temporal period as the CBCs. For each year, we chose the higher value (CBC vs. spatial analysis) because CBCs are generally undercounted. We used these data for the *post hoc* analysis, which compared pre- and post-2011 variance in population counts with an *F*-test. We calculated statistics using R (R Foundation for Statistical Computing, Vienna, Austria) using the drc package (Ritz et al. 2015).

Results

There are currently 5 breeding sites in Miami-Dade County with multiple recent reports: Miami Springs, Fuchs Park, Matheson Hammock, the Miller Roost in Brewster Park, and the Biltmore Hotel (where breeding began circa 1997; eBird Basic Dataset 2019; L. Manfredi, Larry Manfredi Birding Tours Inc., pers. comm.). In Broward County, there are reports of breeding at Richardson Historic Park and Nature Center as recent as 2019: 5 kilometers away from where the second author reported breeding in multiple locations in the Las Olas Isles in 2001 (Fig. 1; eBird Basic Dataset 2019; S. Epps, pers. obs.). The observations from Richardson Historic Park may indicate that Red-masked Parakeets have bred in the vicinity during this 18-year period.

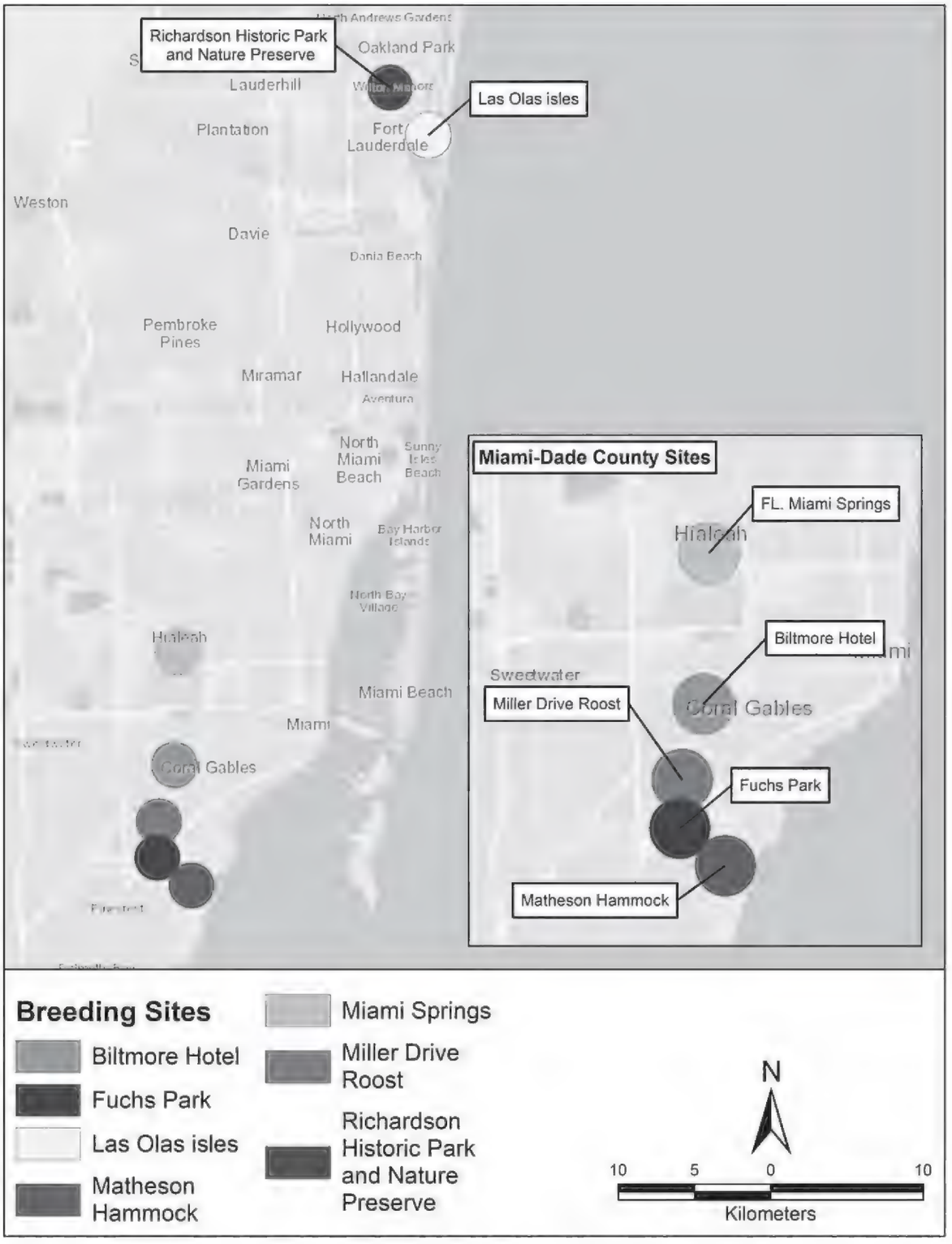

Figure 1. Map of major breeding sites of Red-masked Parakeets in Florida, 1997–2018.

Records indicated 45 instances of nesting, mating, or the presence of juveniles (Table 2).

Variation in bird count was not explained by year ($R^2 = 0.06$). Nearly 100% of the variation was explained by the amount of effort expended (party-hours; $R^2 = 0.998$). The uncorrected CBC data was similar to the individual yearly high counts ($t = -1.12$, $P = 0.27$). We decided to use the

Table 2. Location of Red-masked Parakeet nesting records in Florida from 1997 to 2019 and literature sources.

Locality	County	Date	Comments[a]
Biltmore Hotel	Miami-Dade	1997	*
Coral Ridge	Broward	15 Jul 1999	†
Victoria Park	Broward	2001	†
Wilton Manors	Broward	2001	†
Hendrick's Isle	Broward	6 Feb 2001	Saw several pairs mating in the Australian Pines at 110 Hendricks Isle.*
Kensington Place	Broward	14 Feb 2001	Several pairs checking out nest holes. I saw pairs at 4 or 5 different nest holes.*
Kensington Place	Broward	17 May 2001	Pair seen copulating on a wire in front of their nest hole. Two women from the neighborhood approached me to tell me they had seen the pair feeding a nestling in the nest the previous Sat. Two more women told me they had seen the same thing on other days.*
Jefferson and 16th	Broward	16 Aug 2001	4 at NE 16th Ave. and NE 8th St. Got photos of 2 at the nest hole.*
NE 16th Ave. and NE 8th St.	Broward	26 Aug 2001	2 at a nest hole in a Royal Palm. Appeared to be feeding nestlings.*
Rio Vista	Broward	2002	†
Wilton Manors	Broward	2002	†
Collee Hammock	Broward	13 Jun 2003	A pair peeking out of a nest hole at Collee Hammock.*
Ft. Lauderdale		2002	†
Miami Springs	Miami-Dade	7 Dec 2010	Two adults (pair) with two fledged young.
Matheson Hammock Park	Miami-Dade	19 Apr 2013	Seen flying and in nest cavity hanging out and creating a ruckus.
Matheson Hammock Park	Miami-Dade	28 Apr 2013	Observed both parrots going in & out of nesting cavity, close enough to see more red on face than on Mitered Parrots.

[a]Data sources: ‡ = Diamond and Ross (2019); * = personal observations by S. Epps, L. Manfredi, and D. Click; † = Pranty and Epps 2002; all other records from eBird Basic Dataset (2019).

Table 2. (Continued) Location of Red-masked Parakeet nesting records in Florida from 1997 to 2019 and literature sources.

Locality	County	Date	Comments[a]
Matheson Hammock Park	Miami-Dade	5 May 2013	A pair investigating a royal palm with woodpecker cavities...possible nest location; red along the leading edge of the wing.
Matheson Hammock Park	Miami-Dade	2 Jun 2013	Two pair nesting in the area; red visible on leading edge of wings in flight.
Matheson Hammock Park	Miami-Dade	9 Jun 2013	Peering out of a nest cavity in a royal palm.
Matheson Hammock Park	Miami-Dade	6 Apr 2014	Regular at this location. Medium-sized parakeet with a bright red face and pale yellow orbital rings. Two were inside a cavity in a Royal Palm snag.
Matheson Hammock Park	Miami-Dade	30 Jan 2015	Juveniles and adults. Juvies had red knob above the bill along with red speckling on shoulders and breast. Some red coming in on underwing coverts. Observers here should be careful to not confuse juvenile RMPA with other parakeets (Mitred, White-eyed, etc.). Adults had extensive red on faces and underwing coverts.
Matheson Hammock Park	Miami-Dade	1 Feb 2015	Presumably checking out a cavity for potential nesting on West side of Matheson Hammock.
Matheson Hammock Park	Miami-Dade	13 Feb 2015	Large parakeets with white orbital wings. Juveniles and adults present. Red masks on adults, red foreheads on first year birds. Red underwing coverts. None seemed large enough to be Mitred.
Miami Springs	Miami-Dade	16 Feb 2015	Red bend on wing. Appear to be nesting in back of a local motel near Best Western. Male has all red head.
Matheson Hammock Park	Miami-Dade	23 Mar 2015	All visible at once; pix to come. 8 flew off together, 2 investigated potential nest hole repeatedly.

[a]Data sources: ‡ = Diamond and Ross (2019); * = personal observations by S. Epps, L. Manfredi, and D. Click; † = Pranty and Epps 2002; all other records from eBird Basic Dataset (2019).

Table 2. (Continued) Location of Red-masked Parakeet nesting records in Florida from 1997 to 2019 and literature sources.

Locality	County	Date	Comments[a]
A. D. Barnes Park	Miami-Dade	22 Apr 2015	Completely red head, red in bend of wing. Seen perched as close as 30 feet away. Apparently nesting in Palm snags.
A. D. Barnes Park	Miami-Dade	2 Jun 2015	2 birds on same nesting hole as in past. No speckling red on head.
USA Miami Shores Golf Club	Miami-Dade	16 Jan 2016	With similar-sized White-eyed Parakeets. Some adults with extensive red on face. Juveniles with red foreheads.
Miller Drive Roost (Brewer Park)	Miami-Dade	26 Apr 2016	A number of birds were noted under the canopy of a thicket of trees, some engaging in mating behavior. They were medium-sized parrots with bright cherry-red faces, the color completely encircling their white-ringed eyes. Their bills were pale-colored. The bend in the wing had red markings, but there was no red flecking in the rest of the plumage. There was a hint of blue in the primaries and the upper tail feathers, and the undertail exhibited yellow. They had a recognizable parrot chatter that drew attention to them.
Miller Drive Roost (Brewer Park)	Miami-Dade	27 Apr 2016	Large, long-tailed parakeets with cleanly marked red faces and red at the bend of the wings. Associating with crevices in Casuarina sp -- nesting here!
Fuchs Park	Miami-Dade	29 Jun 2016	Two birds at nest hole in dead palm. Completely red head extending from cap to below chin. Red leading edge on wings.
Miller Drive Roost (Brewer Park)	Miami-Dade	17 Jan 2017	Took photo of group of three birds, apparently two adults and juvenile. Red coloring on head matches description of red-masked--more complete/extensive than Mitred. Also photo shows red on "shoulder" characteristic of Red-Masked. There were at least 7 other parakeets in same group but not able to confirm identity.

[a]Data sources: ‡ = Diamond and Ross (2019); * = personal observations by S. Epps, L. Manfredi, and D. Click; † = Pranty and Epps 2002; all other records from eBird Basic Dataset (2019).

Table 2. (Continued) Location of Red-masked Parakeet nesting records in Florida from 1997 to 2019 and literature sources.

Locality	County	Date	Comments[a]
Coral Gables	Miami-Dade	6 Jun 2017	‡
Richardson Historic Park and Nature Preserve	Broward	4 Aug 2017	
Terramar	Broward	14 Feb 2018	Juveniles
Pine tree park	Miami-Dade	15 Mar 2018	Some seemed to be red masked/white eyed hybrids but two appeared clean with clear red mask slight flecking on body, mostly yellow green underwing. Working figs with large flock.
Utopia	Miami-Dade	17 Mar 2018	Full red mask with red leading edge and yellow/orange underwings. Investigating nesting site.
South Miami	Miami-Dade	8 Jun 2018	‡
Olympia Heights	Miami-Dade	17 Jun 2018	‡
Miami Springs	Miami-Dade	29 Jun 2018	Allopreening on a powerline; an adult and what I presume was a juvenile. The adult showed classic plumage, with bright red on the head surrounding the wide white orbital rings, and with red and yellow at the shoulders. The juvenile was entirely green with wide whitish orbital rings.
Biltmore Hotel	Miami-Dade	16 Feb 2019	Significant group nesting in the uppermost eaves of the Biltmore hotel. Photos show red head with clean borders.
Richardson Historic Park and Nature Preserve	Broward	7 Mar 2019	Possibly nesting - seen going in & out of tree cavity.
Biltmore Hotel	Miami-Dade	11 Mar 2019	Nesting in the eve cavities. Large amount of red on forehead, face, and head.
Miller Drive Roost (Brewer Park)	Miami-Dade	20 Mar 2019	Attractive red mask around eyes. Known roost/breeding site
Biltmore Hotel	Miami-Dade	16 Apr 2019	Completely red on the forehead and cheeks of the bird. Seen flying off and onto some nests.

[a]Data sources: ‡ = Diamond and Ross (2019); * = personal observations by S. Epps, L. Manfredi, and D. Click; † = Pranty and Epps 2002; all other records from eBird Basic Dataset (2019).

uncorrected CBC count data because of the lack of a significant difference between the pooled CBC counts and those of single observations.

Post hoc analysis.—The Red-masked Parakeet's population has shown a trend toward a stable equilibrium since 2004 with a decrease in interannual variation over time (Fig. 2). From 2004 to 2010, the population showed a pattern of irregular oscillations, with a coefficient of variation (CV) of 60.2% and an average of 256 ± 154 (SD) individuals. Since 2011, the population has shown a marked stabilization with a CV of 22.8% and an average of 149 ± 34 (SD) individuals. The pre and post-2011 variance in the populations were unequal ($F = 20.15$, $P < 0.001$). Descriptively, the overall relationship between population and year from 1989 to 2018 was a logistic-regression-type curve (Fig. 3), demonstrating slow initial growth followed by a rapid increase and a plateau in population size.

DISCUSSION

Runde et al. (2007) concluded that the Red-masked Parakeet population in south Florida expanded during the period 1989–2006. Our analysis of recent data indicates that the population is no longer increasing. The pattern of slow population growth followed by rapid expansion and then a plateau (Fig. 2) is similar to Fraticelli's (2004) findings on stable Rose-ringed Parakeet (*Psittacula krameri*) populations in Rome, Italy and consistent with a common pattern of establishment in invasive species (Shigesada and Kawasaki 1997).

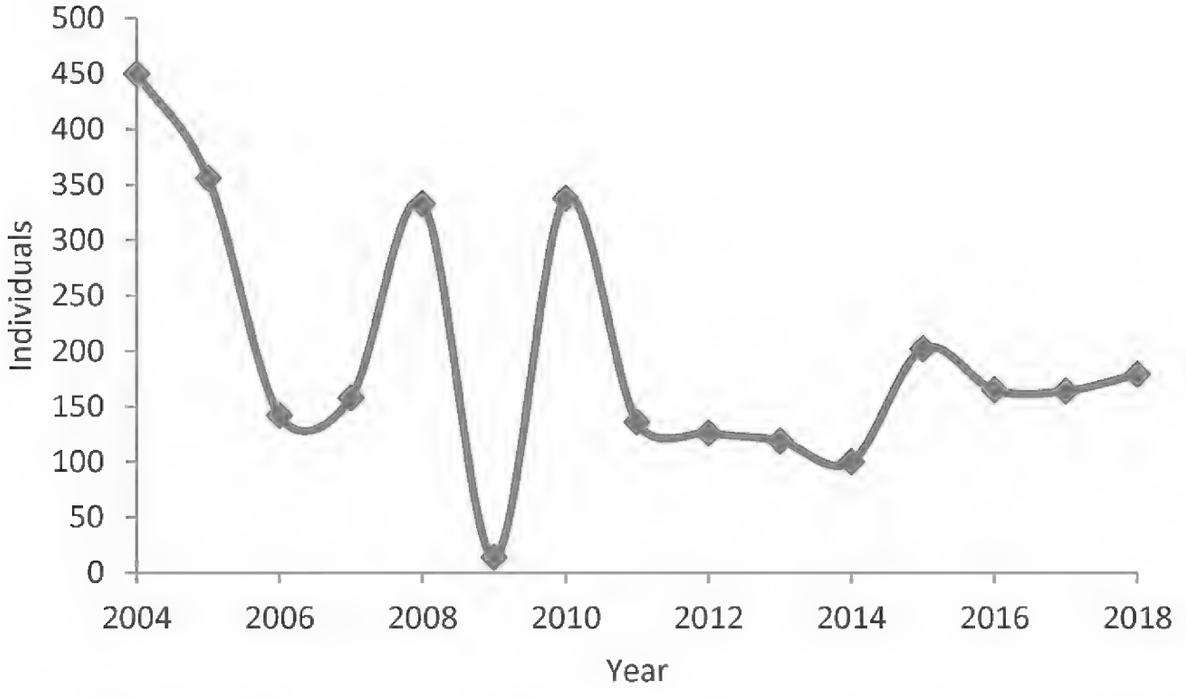

Figure 2. Red-masked Parakeets counted during the Christmas Bird Count in Dade County, Fort Lauderdale, and Kendall, Florida, uncorrected for effort.

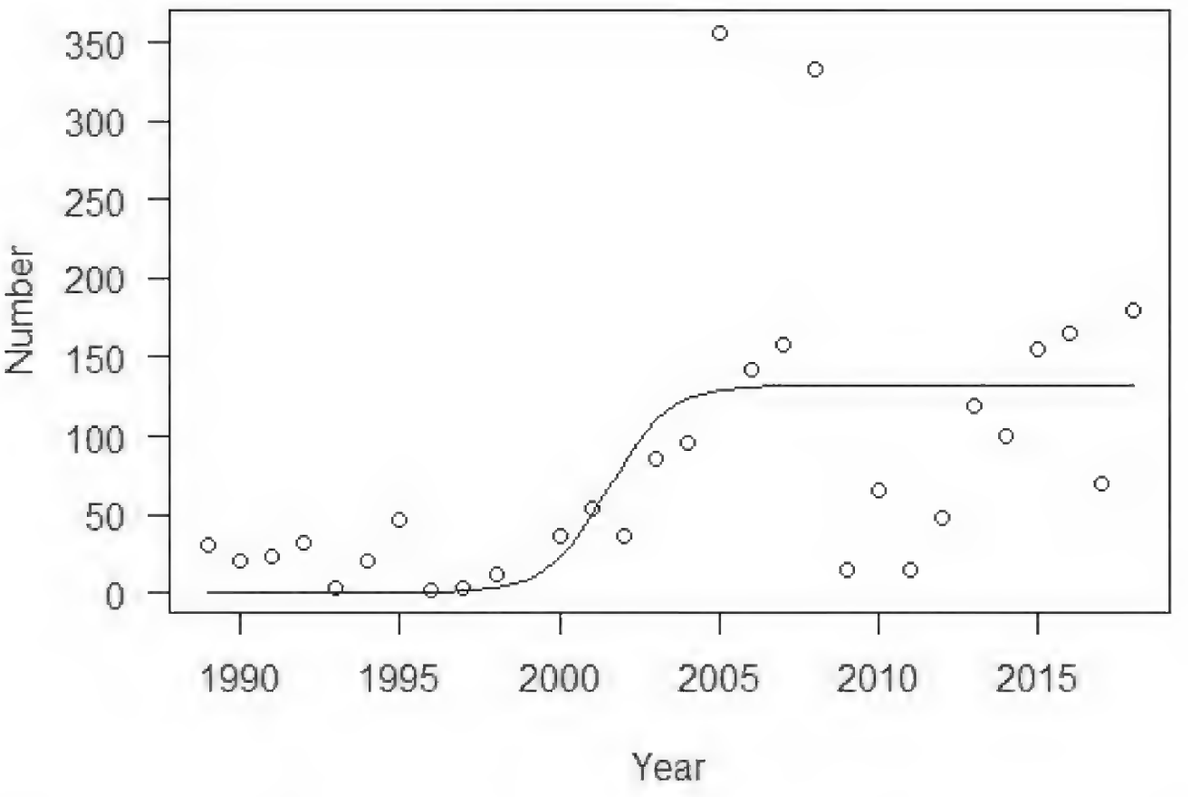

Figure 3. Christmas Bird Counts of Red-masked Parakeets in Dade County, Fort Lauderdale, and Kendall, Florida over time with a fitted, continuous logistic curve. The curve illustrates the distinct trend of slow population growth followed by rapid expansion and then a gradual stabilization characteristic of an established species.

The 450 individuals counted on the 2004 CBCs included 355 from the Las Olas area in the Fort Lauderdale circle, representing the peak of Red-masked Parakeet numbers reported in Florida (S. Epps. unpublished data). In 2011, the roosting trees in the Las Olas area were cut down (L. Manfredi, pers. comm.) and may have played a part in the sharp decrease seen in population counts by dispersing a major flock. The second author observed a similar phenomenon when another roosting site was destroyed, and several smaller roosts formed in the vicinity. Geographic dispersion into smaller groups may explain the significantly lower inter-annual population counts observed post-2011 by reducing skew (if present) in the reports used to compile CBCs. This is unlikely to be a permanent trend given the gregarious nature of the species noted by Best et al. (1995) and may result in a return to high inter-annual variance in count numbers.

In the last 8 years, eBird and CBCs consistently report Red-masked Parakeet counts at approximately half the pre-2011 levels. Population trends are largely dependent on breeding success, though escapees may play a partial but unknown role because of their popularity as pets (Best et al. 1995). Pranty and Epps (2002) noted as early as 2001 that Red-masked Parakeets were successfully breeding in Broward

County and the population was increasing. Diamond and Ross (2019) concluded that Red-masked Parakeets were one of the two most successful cavity nesting parrots in the Miami area. Thus the observed data could indicate a trend towards population stability or a temporary plateau leading to a future increase.

We conclude that the pattern exhibited by Red-masked Parakeets since their first report in 1986 follows that of an established exotic species (Shigesada and Kawasaki 1997), but we suggest more can be done to explicitly monitor their population going forward. Garrett (2018) reports that parrots require special techniques not regularly employed in Florida, such as morning roost departure surveys. Advocating such methods in conjunction with tracking known roosting locations will help further our understanding of this species in south Florida.

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SYNANTHROPY AND POPULATION GROWTH IN SOUTH FLORIDA'S EXOTIC MITRED PARAKEET (*Psittacara mitrata*)

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Abstract.—Since the introduction of cliff-nesting Mitred Parakeets (*Psittacara mitrata*) to Miami-Dade County, they have steadily increased their population and range and nest solely on anthropogenic structures, forming a synanthropic relationship with humans. We examined their population growth since 2004 using data from the Cornell Lab of Ornithology's eBird project and the National Audubon Society's Christmas Bird Counts. Our results from both datasets indicate continued population growth. We conclude their success is in part due to a well-studied colonization process by which the colonizer uses a similar niche in its new environment with few competitors—in this case by using building cavities instead of cliffs, a nesting strategy not shared by other exotic parrots in the area.

Key words: exotics, Florida, parrots, synanthropy

For species that colonize new territories, the ability to adapt defines their success or failure. Within this framework birds prove to be ideal model organisms in studying adaptation, both as natural colonizers and as introduced species (Diamond 1970, Marlzuff et al. 2001). Islands (including urban islands) offer a case in which a colonizing species can establish itself by occupying its prior niche in the new environment without competition (Sax and Brown 2000). In the case of urban islands, when an invasive species benefits from a commensal relationship from humans, it is known as synanthropy (Tomialojć 2017).

The most successful invasive species are often associated with human habitation in their native range (Tomialojć 2017). This hypothesized long-term association with humans is not a prerequisite for synanthropic adaptation: in South Florida the introduced Mitred Parakeet (*Psittacara mitrata*) offers a notable exception. They tolerate the presence of humans in their native range of western South America but are not associated with them, living primarily in semi-arid montane regions (O'Neill 1982, Waring 1997). Although a few have been noted to nest in tree cavities, the Bolivian and Peruvian populations nest strictly on cliffs (Fjeldså and Krabbe 1990, Silva 1993).

Pranty and Garrett (2003) noted that the pet trade imported 140,000 Mitred Parakeets from 1981 to 1990, including 35,000 from the cliff-dwelling Bolivian population. Their subsequent release or escape

from captivity resulted in breeding populations in Hawaii, California, and Florida. The Hawaiian population has since been the subject of systematic eradication because they were outcompeting native species (Runde et al. 2007, Radford and Penniman 2014). Although the California population is estimated to be >1,000 individuals, only South Florida's population shows a consistently increasing number of individuals within a small area (Butler 2005, National Audubon Society 2019, eBird Basic Dataset 2020). Unlike Red-masked Parakeets (*Psittacara erythrogenys*), which have a stable population in the Miami and Fort Lauderdale area (Chatfield-Taylor and Epps 2020), Mitred Parakeets are experiencing consistent growth. The dichotomy between these two population trends deserves investigation. We propose that the steady population increase in Mitred Parakeets is in part due to their ability to exploit buildings as an anthropogenic substitute for their native cliff-nesting niche, demonstrating a case of colonization as described by Sax and Brown (2000) and representing a classic synanthropic relationship (Tomialojć 2017).

Methods

Data collection.—We obtained data on distribution, counts, and nesting observations from 2004 to 2019 from the eBird basic dataset (2020), the National Audubon Society (2019) Christmas Bird Counts (CBC), Diamond and Ross (2019), personal observations and unpublished data by the senior author, and personal communications from local birding guides Larry Manfredi and Paul Bithorn. The CBC data incorporates data from three count circles (Kendall, Fort Lauderdale, and Dade County) and provides a consistent means of tracking exotic species, including parrots (Runde et al. 2007, Chatfield-Taylor and Epps 2020). Uehling et al. (2019) used eBird data to monitor multiple exotic parrot species in the United States. We restricted the use of eBird and CBC data for statistical purposes to after 2004 because of the difficulty in identifying *Psittacara* species prior to their wider inclusion in field guides in the early 2000s. We recorded all observation of nesting and associated notes (where applicable) separately.

Data correction and population trends.—Chatfield-Taylor and Epps (2020) studied trends in South Florida's Red-masked Parakeet population and found that from 2004 to 2018 yearly individual high counts from the eBird Basic Dataset (2020) did not differ significantly from total CBC counts (unpublished data). We concluded that the CBC data did not need to be normalized for the party hours spent in the circles. We repeat this approach, comparing the yearly high counts in the eBird Basic Dataset (2020) to the CBC counts from 2004 to 2019 (Table 1). We compared means using a two-sample *t*-test.

With *a priori* knowledge that single point counts in eBird data and personal observations are not affected by effort, we plotted both the yearly eBird high counts and CBC data against time to visualize population trends. We conducted all statistics in R (R Foundation for Statistical Computing, Vienna, Austria) using the car package (Fox and Weisberg 2019).

Results

Nesting records.—Personal observations, communications, and the eBird Basic Dataset (2020) provided 12 specific observations of nesting

Table 1. Yearly high counts of Mitred Parakeets in South Florida from single observations in eBird and compiled Christmas Bird Count (CBC) data.

Year	Single observation eBird high count	CBC count	Location	County	Date
2004	50	120	Kendall	Miami-Dade	13 Apr 2004
2005	50	24	Miami Springs	Miami-Dade	27 Jul 2005
2006	30	211	Kendall	Miami-Dade	12 Nov 2006
2007	105	370	Kendall Baptist Hospital	Miami-Dade	22 Nov 2007
2008	200	309	Kendall	Miami-Dade	3 Jan 2008
2009	70	378	Kendall Baptist Hospital	Miami-Dade	5 Dec 2009
2010	100	319	Kendall Baptist Hospital	Miami-Dade	11 Jan 2010
2011	200	156	Datran Drive and US 1	Miami-Dade	18 Feb 2011
2012	205	273	Datran Drive and US 1	Miami-Dade	3 May 2012
2013	260	273	Datran Drive and US 1	Miami-Dade	6 Feb 2013
2014	373	484	Dadeland Mall	Miami-Dade	27 Dec 2014
2015	285	640	King Creek Greenway Area	Miami-Dade	26 Dec 2015
2016	400	573	Datran Drive and US 1	Miami-Dade	20 Jan 2016
2017	515	671	Dadeland Mall	Miami-Dade	21 Jan 2017
2018	200	320	Guitar Center, Kendall Drive	Miami-Dade	31 Dec 2018
2019	225	423	Dadeland Mall	Miami-Dade	21 Dec 2019

Mitred Parakeet, including an observation as recent as February 2020 (Table 2). Juvenile and immature birds were regularly observed. Unlike Red-masked Parakeet, Mitred Parakeets are not flagged in eBird and do not require notes when reported. This is likely responsible for the lack of nesting data in eBird, despite a conservative estimate of 4 times the number Mitred Parakeets than Red-masked Parakeets (National Audubon Society 2019, Chatfield-Taylor and Epps 2020, eBird Basic Dataset 2020)

Three specific locations (Dadeland Mall, the Fair Haven Center, and the Kendall Baptist Hospital) have generally unreported but consistently observed nesting for 10, 20, and 22 years, respectively (eBird Basic Dataset 2020; P. Bithorn, Paul Bithorn's Birding Tours, pers. comm.; L. Manfredi, Larry Manfredi Birding Tours, pers. comm.). All observations of nesting were on various anthropogenic structures. A detailed survey of cavity nesting species in Miami-Dade County by Diamond and Ross (2019) did not detect Mitred Parakeet, though they did report the birds nesting on an apartment building.

Data correction and post hoc analysis.—The results of the comparison between the average eBird high count data and the CBC counts was statistically significant ($t = 2.49$, $P = 0.02$), indicating that they were not equal. However, when the two datasets are plotted against time, they show a similar pattern of growth (Fig. 1). This could indicate that although the count numbers are different, the population trend may be the same. We conducted a *post hoc* analysis to determine if this is the case. Using the interaction term from a two-way analysis of variance, we found that the slopes were homogeneous ($F = 0.24$, $P = 0.63$), indicating that the eBird data showed the same population trend as the CBCs. We therefore used the CBC data uncorrected for effort.

Discussion

Since 2004, the Mitred Parakeet population has consistently grown, with 120 counted on the 2004 CBCs and a high of 671 on the 2017 CBCs, a pattern corroborated by eBird data (Fig. 1). This may indicate that there are few limiting resources for this species within the South Florida urban landscape, specifically nesting sites. Fjeldså and Krabbe (1990) and Silva (1993) both noted that Mitred Parakeets nest in cliff cavities in their native range and the evidence indicates that when introduced to South Florida they adapted to nesting in building cavities. They have bred for 20 years in cavities in the Fair Havens Center and the Kendall Baptist Hospital and records exist of breeding in other buildings throughout Miami-Dade and Broward County (Table 2), but an exhaustive survey of cavity nesting birds by Diamond and Ross (2019) did not find any nesting in natural cavities (though they found 3 other species of parrot).

Table 2. Location of nesting records of Mitred Parakeets in South Florida from 1998 to 2020 and literature sources.

Locality	County	Date	Comments[a]
Kendall Baptist Hospital	Miami-Dade	1998–2019	Approximate range of nesting at this location.*
Fair Haven Center	Miami-Dade	1999–2019	Nesting in the terra cotta scuppers [of the nursing home].*
Prudential Building: Las Olas Boulevard and NE 9th Avenue	Broward	5 Aug 1999	Learned that they nest in the attic of the Prudential Building. There are holes in the wooden eaves.†
Prudential Building: Las Olas Boulevard and NE 9th Avenue	Broward	11 Jan 2000	Saw several using nest holes in the eaves of the Prudential Building.†
Dadeland Mall	Miami-Dade	2001–2018	Approximate date of first nesting at this location.*
Prudential Building: Las Olas Boulevard and NE 9th Avenue	Broward	29 Feb 2002	Several pairs at the nest holes in the Prudential Building.†
Law Office in 500 block of SE 7th Avenue	Broward	20 May 2002	A pair with 2(?) juveniles at a nest. The nest is in the vent to the crawl space in a law office 500 block of SE 7th Avenue. Got pictures of an adult near the nest and an adult feeding a juvenile.†
Rio Vista Health Spa	Broward	1991– 3 Jul 2001	Small flock feeding in a strangler fig in the parking lot of the Rio Vista Health Spa. An employee there told me that the parrots have been nesting in their courtyard for 10 years. She said, they nest in the flues of the chimney. There are now 8 pairs nesting on the property.†
Spanish style home in Broward (possible nesting)	Broward	3 Jul 2001	I [also] saw 2 go into a rainwater runoff (?) at a Spanish style home on the river. Both entered; I don't know if they went through a passage or if there is a cavity there. †

[a]Sources: ‡ = Diamond and Ross (2019); * = personal communications; † = senior author's personal observations; all other records from eBird Basic Dataset (2020).

Table 2. (Continued) Location of nesting records of Mitred Parakeets in South Florida from 1998 to 2020 and literature sources.

Locality	County	Date	Comments[a]
Kings Creek Condominium	Miami-Dade	2 Jul 2003	40+ nesting in eaves and vents of Kings Creek Condominium. Kendall Dr. just W of 826. 79th right from Kendall by Larry Manfredi.*
Kendall Baptist Hospital	Miami-Dade	17 Apr 2010	Nesting on the Baptist Hospital! At least four active nests with the parrots in them.
Dadeland Mall	Miami-Dade	29 Oct 2011	Big roosting site for over a decade for this species, which nests inside buildings instead of natural tree cavities.
Kendall Baptist Hospital	Miami-Dade	26 Nov 2015	Hanging from dangling fixtures just below roof line on north face of hospital at west end of the visitor parking lot. Two adults perched with one immature occasionally peeking out from cavity. Green-bodied with mottled red facial markings and lack of red.
Miami	Miami-Dade	2019	...during our searches we found a large nesting colony of Mitred Parakeets (*Psittacara mitrata*) nesting in the roof of an apartment building.‡
Kings Creek Shopping Center	Miami-Dade	7 Feb 2020	Going in and out of the soffit.*

[a]Sources: ‡ = Diamond and Ross (2019); * = personal communications; † = senior author's personal observations; all other records from eBird Basic Dataset (2020).

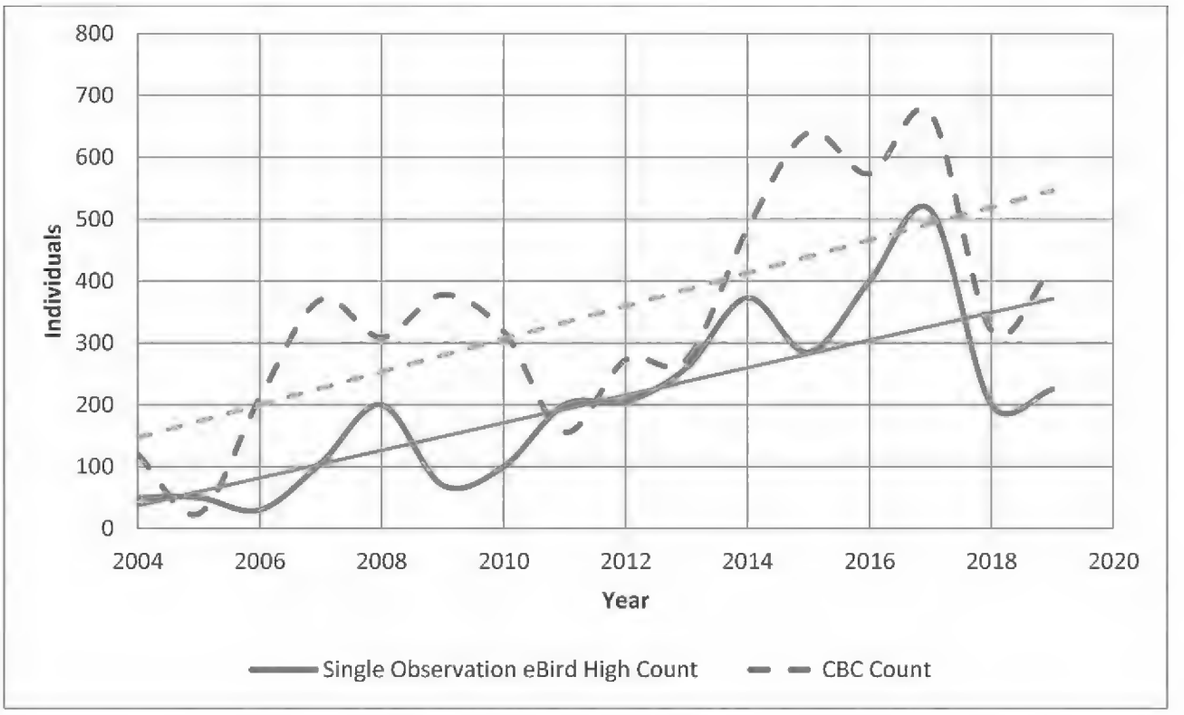

Figure 1. Population trends of Mitred Parakeet in South Florida over time from eBird Data and the Dade County, Fort Lauderdale, and Kendall, Florida Christmas Bird Count (CBC), "uncorrected for effort and fitted with trend lines.

The colonization of Miami and Fort Lauderdale by Mitred Parakeets appears to follow the model presented by Sax and Brown (2000) in which the urban setting formed a likely anthropogenic substitute for their native cliff-nesting niche. Successful island colonization postulates a necessary lack of competition in the colonizer's new niche from existing species (Sax and Brown 2000). The data indicate that this holds true for Mitred Parakeet; the remaining exotic parrot species nest in natural cavities (with the exception of the nest-building Monk Parakeet [*Myiopsitta monachus*]; Pranty and Epps 2002, Diamond and Ross 2019). Future study is needed to determine if Mitred Parakeets face competition from other synanthropic species such as Rock Pigeon (*Columba livia*).

Potential checks on continued population growth for many species include limited food sources, human efforts to discourage nesting, and the exotic parrot trade (Newton 1980, L. Manfredi, pers. comm.; S. Epps, pers. obs.). Although certain species in Florida such as Snail Kites (*Rostrhamus sociabilis*) are restricted to a narrow dietary range (Sykes 1987), the senior author documented Mitred Parakeet feeding on 34 native and introduced plant species in Florida (Table 3). The staff at Baptist Hospital used sheet metal to cover cavities but only had marginal success in curbing breeding and the site is still active; conversely, some buildings in Broward County had cavities enlarged by the parakeets, making nesting easier (L. Manfredi, pers. comm.).

Table 3. Documented food sources of Mitred Parakeets in South Florida.

Common name	Scientific name
Australian pine	*Casuarina equisetifolia*
Bald cypress	*Taxodium distichum*
Ball moss	*Tillandsia recuruata*
Banyan	*Ficus* spp.
Black olive	*Bucida buceras*
Brazilian pepper	*Schinus terebinthifolius*
Camphor	*Cinnamomum camphora*
Coconut palm	*Cocos nucifera*
Common guava	*Psidium guajava*
Eucalyptus	*Eucalyptus* spp.
Gumbo limbo	*Bursera simaruba*
Japanese magnolia	*Magnolia liliiflora*
Juniper	*Juniperus* spp.
Laurel fig	*Ficus nitida retusa*
Java plum	*Syzgium cuminii*
Live oak	*Quercus virginiana*
Loquat	*Eriobotrya japonica*
Lychee	*Litchi chinensis*
Magnolia	*Magnolia grandiflora*
Mahogany	*Swietenia mahagoni*
Mango	*Mangifera indica*
Mimosa	*Albizia julibrissan*
Mountain apple	*Syzgium malaccense*
Papaya	*Carica papaya*
Persimmon	*Diospyros* spp.
Red ironbark	*Eucalyptus sideroxylon var. rosea*
Rose apple	*Syzgium jambos*
Royal palm	*Roystonea elata*
Royal poinciana	*Delonix regia*
Sea grape	*Coccoloba uvifera*
Shortleaf fig	*Ficus citrifolia*
Strangler fig	*Ficus aurea*
Strawberry guava	*Psidium cattleianum*
Woman's tongue	*Albizia lebbeck*

Although no data exists on the continued release and escape of captive birds, the number of releases is likely far exceeded by those trapped for the exotic parrot trade (S. Epps. pers. obs.).

Since their first observation in 1987, Mitred Parakeets have colonized the urban islands of Broward and Miami-Dade Counties as defined by Sax and Brown (2000), forming a synanthropic relationship. Like the Italian population of Rose-ringed Parakeet (*Psittacula krameri*), we expect continued urbanization to reinforce and increase Mitred Parakeet numbers as they exploit an abundance of nesting sites and food sources (Battisti and Dodaro 2016). Although human

efforts to discourage nesting and the effects of active trapping may slow population growth, they are unlikely to have a significant effect on the overall trend.

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FIRST FLORIDA RECORD OF DARK-BILLED CUCKOO (*Coccyzus melacoryphus*)

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Some of the rarest vagrants to reach North America are "austral migrants," species that breed at southern latitudes and migrate north to winter in tropical and subtropical latitudes—a mirror image of the more familiar boreal migrants of North America and Eurasia. About 220 species of birds in South America are considered austral migrants (Chesser 1994). The handful of these species that have been recorded in North America presumably were misdirected either by overshooting their wintering grounds on their northbound migration in boreal spring, or by 180-degree reverse migration during their southbound migration in boreal fall, as McCaskie and Patten (1994) hypothesized for Fork-tailed Flycatchers (*Tyrannus savana*). Among these austral migrants is the Dark-billed Cuckoo (*Coccyzus melacoryphus*), which breeds in Uruguay and Argentina, and winters mostly in Colombia and Venezuela and Amazonian Brazil (Payne 2005). They are passage migrants in eastern Peru, Bolivia, and Paraguay. Resident populations also occur west of the Andes in Colombia, Ecuador, and the Galápagos Islands, and scattered throughout northern South America. Dark-billed Cuckoos have occurred only rarely north of South America (eBird, AOU 1998), with records from Clipperton Island (13 August 1958), Grenada (26 March 1963), Panama (26 January 1980), Nicaragua (28 April 2017), and an individual recovered from a wildlife rehabilitation clinic in Texas, USA. The latter bird was brought to the clinic on 7 February 1987, later died there, and then was donated to the Louisiana State University Museum of Natural Sciences and prepared as a skin specimen (LSUMZ 164956). The record was accepted by the Texas Bird Records Committee (Lockwood 1998) but was designated as "origin hypothetical" by the ABA-Checklist Committee because of the unclear circumstances of its discovery (Robbins et al. 2003).

On 6 February 2019, Marcello Gomes and Kyle Matera were birding at West Delray Regional Park in Palm Beach County, Florida. At 1701, they spotted a *Coccyzus* cuckoo in the scrubby woods of the park, and were able to get photographs. The bird had an all dark bill, creamy underparts, with white sides of the throat. The bill and throat color seemed to rule out Yellow-billed Cuckoo (*Coccyzus americana*), the only common species of *Coccyzus* in the state, which is a common migrant and widespread summer resident but does not typically arrive in Florida until mid-March at the earliest (Stevenson and Anderson 1994). Because of the black bill, they initially suspected that it was a Black-billed Cuckoo (*C. erythropthalmus*), a rare migrant in Florida, although that species typically is not present until April (Stevenson and Anderson 1994). With closer inspection, they noticed the creamy underparts, and then suspected that it may be an aberrant or young Mangrove Cuckoo (*C. minor*). The Mangrove Cuckoo is an uncommon breeding species in mangroves and West Indian hammock forests in extreme south Florida and the Florida Keys; they are quite unusual north of southern Miami-Dade County (Greenlaw et al. 2014). They posted

their photographs on eBird that night (as Mangrove Cuckoo), which set off alerts to eBird subscribers. Over the next 24 hours many birders responded on various websites, and eventually identified it as a Dark-billed Cuckoo.

The observers found the cuckoo again on the morning of 8 February and dozens of other observers saw the cuckoo over the next few days (including AWK on 9 February). It was last seen on 10 February at approximately 0900. The bird was incredibly well documented; 142 lists were submitted to eBird that included this cuckoo, many with photographs.

The large West Delray Regional Park is a multi-use facility, with areas devoted to radio-controlled devices (airplanes, trucks, and helicopters), mountain-biking, archery, disc-golf, picnics, and camping. The western edge of the park is a thick, wet hardwood hammock, continuous with similar forests along the canals that partition the developed eastern areas of Palm Beach County from the stormwater treatment areas of the western part of the county. The park has small ponds bordered by scrub, and large areas of open grassy fields. The park is not often visited by birders; for example, only three checklists for the park were submitted to eBird in January 2019 and only two in December 2018. The wooded and scrubby areas of the park are heavily used by mountain bikers, and single-track trails wind throughout the woods and scrub. The cuckoo was seen only in the scrubby edges bordering the ponds and parking lots, which were dominated by Australian pines (*Casuarina* sp.), willows (*Salix* sp.), and Brazilian pepper (*Schinus terebinthifolia*). Canopy height in the scrub was only 3–5 m, with the *Casurina* topping at about 10 m.

The cuckoo had the typical languid behavior of *Coccyzus* cuckoos, moving slowly through the leafy parts of the shrubs, with long pauses to forage for insect larvae, mostly caterpillars of gulf fritillaries (*Agraulis vanilla*). It occasionally dropped to the leaf litter to forage. Early in the day or after rain showers, it sometimes perched in the open, slightly spreading its wings and fanning its tail as the morning sun hit its underparts. It had quick direct flights, and was easy to lose in the vegetation when it moved more than a few meters. However, it tended to be easy to find again because it kept in the more

Figure 1. Side view of Dark-billed Cuckoo, Palm Beach County, 8 February 2019. Photo by Mark Berney.

open scrub rather than the thicker nearby forests. It seemed largely unperturbed by the throng of birders and the near constant passing of mountain-bikers, some as close as 3–4 m. It never vocalized during our visits.

The following description is based on photographs posted on eBird, and photographs by the authors. This was a small *Coccyzus* cuckoo, about the size of a Northern Mockingbird (*Mimus polyglottos*). The bill was completely flat black and rather small for a *Coccyzus*, compared to Yellow-billed or Mangrove cuckoos (Fig. 1). The bare eyering was complete and dull yellow. The iris was very dark brown. The crown was grayish brown. A somewhat inconspicuous sooty mask extended from the lores to posterior of the eye. The back, rump, scapulars, and wing coverts were warm brown (Fig. 2). The remiges were broadly edged brownish-rufous, giving the bird a rufous wing panel at rest, somewhat similar to Yellow-billed Cuckoo but less distinctive (Fig. 1). The underwing coverts were light creamy peach. The underparts were light creamy peach from the chin to the tips of the undertail coverts but with contrasting bright, pale grayish-white malars (Fig. 1). The outer three pairs of the strongly graduated rectrices were dark gray (moderately worn) to black (fresh, only R4), and broadly tipped white; the inner two pairs were brown and worn (Fig. 3). The toes appeared to be pale olive-gray. Although KM and MG had never

Figure 2. Dorsal view of Dark-billed Cuckoo, Palm Beach County, 8 February 2019. Photo by Mark Berney.

before seen this species, and AWK had only observed the species once prior (in Peru in 1996), the species is distinctive and easily identified.

Based on the more tapered shape and less contrasting black and white pattern of the rectrices (Fig. 3), the Florida bird is a first winter or juvenile if Dark-billed is similar to other species in the genus (Pyle 1997). Similarly, the Texas bird (see above) also shows this pattern typical of a juvenile or first-winter bird. Payne (2005) stated that young birds have a rufous wing panel, which the Florida individual clearly shows (Fig. 2).

A wild origin for this cuckoo's occurrence in Florida is far more likely than an escape from captivity. *Coccyzus* cuckoos are very rarely kept by aviculturists or zoos (Payne 2005). The bird did not show any signs of former captivity, although the one new feather in the tail is not likely part of a normal molt sequence. Broken or lost single feathers

Figure 3. Ventral view of Dark-billed Cuckoo, Palm Beach County, 8 February 2019. Photo by Mark Berney.

are often replaced, and cuckoo feathers in general are more loosely attached than in most other bird orders (AWK, pers. obs). Previous records of Dark-billed Cuckoo far from its normal distribution (Clipperton Island, Grenada, Nicaragua) give this species an established pattern of vagrancy expected in a long-distance migrant. The dates of the Florida bird (7–10 February) are similar to the Panama record (26 January), and the Texas record (7 February), indicating that his species may leave its breeding grounds quite early. The Dark-billed Cuckoo in Palm Beach County was unanimously accepted by the Florida Ornithological Society Records Committee (#2019-1384) and the ABA-Checklist Committee (Pyle et al. 2019).

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AN UNUSUAL BACHMAN'S SPARROW NETTED DURING THE BREEDING SEASON IN PENINSULAR FLORIDA

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Bachman's Sparrows (*Peucaea aestivalis*) exhibit striking variation in plumage throughout their North American range (Dunning et al. 2018). Individuals that breed in peninsular Florida (*P. a. aestivalis*) have dull gray chests, have feathers with blackish centers along the dorsum, and are much darker overall than individuals found elsewhere (Stevenson and Anderson 1994). The plumage brightens moving north and west and shifts from a reddish-brown dorsum in northwest Florida (*P. a. bachmani*) to brighter, chestnut-colored plumage among presumed migratory populations found in northern Texas and Oklahoma (*P. a. illinoensis*). The dorsal feathers of populations found north and west of peninsular Florida also lack the dark central line (Pyle 1997). These differences have been used to infer migration patterns of different populations as birds with the plumage associated with one region turn up in winter in areas where individuals of another plumage type breeds (Stevenson and Anderson 1994, Pyle 1997, Dunning et al. 2018).

On 27 July 2017, we were collecting blood samples from Bachman's Sparrows on Starkey Wilderness Park (Pasco County, FL) as part of a range-wide genetic assessment. We lured males into mist nets using conspecific songs, collected a small blood sample from the brachial vein, and then weighed, measured, and released individuals (Cerame et al. 2014). One of the males we captured had plumage characteristics (Fig. 1A) typically found in populations farther north and west rather than the typical plumage of birds in central Florida (Fig. 1B). The feathers lacked black centers along the dorsum, and the overall tone of the dorsum, head, and secondary feathers was much brighter with orange hues (Fig. 1A). This individual also had the chestnut-toned post-ocular stripe described for the *bachmani* species (Dunning et al. 2018), but the throat and breast were not as buffy as described for the *illinoensis* subspecies (Dunning et al. 2018).

There are a few records of unusual Bachman's Sparrows showing up in Florida during migration and winter, but no such records exist to our knowledge during the breeding season. A western-plumaged *illinoensis* sparrow died at the WCTV tower on 17 October 1958 (Tall Timbers Research Station specimen 2129) and another western plumaged *illinoensis* individual was photographed by K. Tracey at Weekiwachee Preserve in January–February 2011 (Pranty 2011). There are also records of brighter plumaged Bachman's Sparrows striking the WDBO tower near Orlando in October (Stevenson and Anderson 1994). Stevenson and Anderson (1994) also reported winter records of the brighter *bachmanii* subspecies in Dade County, Florida, and noted that these and other records helped to establish migration timing and winter haunts for this presumably migratory subspecies. Of course, migration strategies can vary markedly among individuals and populations (Hill and Renfrew 2019). Individually color-marked Bachman's Sparrows found in Georgia over-wintered on the breeding

Figure 1. A) A territorial male Bachman's Sparrows netted on Starkey Wilderness Preserve, July 2017 and B) a typical central Florida plumage also netted on Starkey Wilderness Preserve, July 2016 (Pasco County).

territories they defended the previous breeding season (Cox and Jones 2009). Individuals in other populations may choose to migrate, or not, and this decision may depend on the condition of the individual (Chapman et al. 2011).

This sparrow had a distinctive plumage compared to the other individuals we sampled in central Florida (n = 32). The individual may have been an aberrant case of

erythrism (Griscom 1932), but the bright tones were not distributed across the breast, flank, stomach, and other areas as often occurs with erythrism. Instead, we suspect this individual may have hatched elsewhere within the species' range, undertook migration, and then chose to reside on the over-wintering grounds and attempt to breed. The male responded aggressively to the playbacks that we used (recorded from a population in north Florida) and we observed the individual defending its territory the following day against neighboring males. If this scenario is correct, it helps to corroborate results from recent genetic assessments (Cerame et al. 2014) that found gene flow throughout the range of the sparrow to be substantial. Contrary to predictions based on the range of different subspecies (Dunning et al. 2018), Cerame et al. (2014) did not observe genetic structure, even among populations separated by large, geographic barriers (e.g., Mississippi River).

Acknowledgments

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INLAND BREEDING OF GRAY KINGBIRDS (*Tyrannus dominicensis*) IN HENDRY COUNTY, FLORIDA

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At 1355 hours on 9 June 2017, while en route to Palm Beach County, Florida, to observe a Tropical Mockingbird (*Mimus gilvus*), we stopped at the Walmart (1005 West Sugarland Highway) in Clewiston, Hendry County, to see what birds were present. In the front parking lot, we noticed a Gray Kingbird (*Tyrannus dominicensis*) perched at the top of a live oak (*Quercus virginianus*). We quickly discovered its nest (Fig. 1), which was built in the same oak on a horizontal branch about 3.6 m above the ground. The nest was a large, bulky structure constructed of twigs and containing several long strands of plastic twine. Within a few minutes, a second Gray Kingbird flew to the nest carrying food. It perched on the nest cup and appeared to feed nestlings, which were not visible from the ground. The habitat of this nest is very similar to Gray Kingbird nests found in southwestern Florida, where kingbird nests are often built in young oaks that have been planted in parking lots (J. A. Jackson in litt.). Lighting associated with these parking lots attracts insects and may also allow the birds to forage for longer periods relative to nests built in less-lighted sites (J. A. Jackson in litt.). After watching the kingbirds for several minutes, we departed.

Our observation represents the northernmost verifiable (i.e., photographic or specimen) record of Gray Kingbirds breeding inland in Florida (Stevenson and Anderson 1994, Smith and Jackson 2002, Greenlaw et al. 2014). This observation builds on a growing body of evidence, mostly unpublished in the ornithological literature, that breeding around Lake Okeechobee has been occurring for several years and may now be a regular event. For instance, BP and others observed five Gray Kingbirds, presumed to be a family group, at Okee-Tantie Campground along the northwestern shore of Lake Okeechobee, Okeechobee County, on 27 July 2007, and two kingbirds were observed there on 19 August 2007 (Gray et al. 2009). The Gray Kingbird range map in eBird (ebird.org) contains numerous observations, including many supported by photographs, of one or more kingbirds around Lake Okeechobee during May–July. The most significant eBird observation, by James Petersen, is of a pair of Gray Kingbirds photographed near their nest at Lake Okeechobee Levee Park near Clewiston on 18 May 2017 (Petersen 2017). The Levee Park nest, which was also built in an oak, was built about 2.8 km east of the Walmart nest that we found, and may have been active concurrently.

Acknowledgments

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Figure 1. Adult Gray Kingbird at its nest at Clewiston, Hendry County, Florida, on 9 June 2017. The nest was built in a live oak planted in a Walmart parking lot. Note the several strands of plastic twine built into and hanging below the left side of the nest. This nest represents the northernmost inland record of Gray Kingbirds breeding in Florida. Other recent observations, including two detailed in this paper, suggest that Gray Kingbirds may now be breeding regularly around Lake Okeechobee. Photograph by Bill Pranty.

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FIELD OBSERVATIONS

Fall Report: August–November 2019.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Electronic submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December–February), spring (March–May), summer (June–July), and fall (August–November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers follow this report.

Sight-only observations are considered "reports," whereas only those observations supported by verifiable evidence (photographs, video or audio recordings, or specimens) are called "records." Species for which documentation is required by the FOC and by the FOS Records Committee (FOSRC; <fosbirds.org/florida-bird-list.html>) are marked here with an asterisk (*). A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations in this report are: AFB = Air Force Base, AFR = Air Force Range, EOS = end of season, m. obs. = many observers, NERR = National Estuarine Research Reserve, NP = National Park, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, SF = State Forest, SP = State Park, STA = Stormwater Treatment Area, STF = sewage treatment facility, WMA=Wildlife Management Area, and N, S, E, W, etc., for compass directions. Bold-faced entries denote birds newly reported or verified in Florida, or record numbers. +Photographs or video- or audio-recordings archived by the FOC are identified by a plus (+).

Summary of the Fall Season

The fall season was marked by the passage of Hurricane Dorian off the east coast of Florida, where tropical storm-force winds were encountered from 2 September through 4 September. Consequently, there are many observations of pelagic species from 4 September included in this report.

State review species noted in this report include an American Black Duck, an Antillean Palm-Swift, a Calliope Hummingbird, a Hudsonian Godwit, two Ruffs, several Sabine's Gulls, up to two Heermann's Gulls, an Elegant Tern, a Manx Shearwater, a Great Cormorant, two Yellow-bellied Flycatchers, several Alder Flycatchers, several Willow Flycatchers, four Thick-billed Vireos, three Lapland Longspurs, three Mourning Warblers, a Kirtland's Warbler, and a Black-faced Grassquit.

Species Accounts

Black-bellied Whistling-Duck: 300 at Rabun Road (*Jefferson*) 16 Nov (A. Smith, M. Smith).

Fulvous Whistling-Duck: 1 at Ritch Grissom Memorial Wetlands (*Brevard*) 28 Sep (R. Peipert); 42 at Lake Apopka Wildlife Drive (*Orange*) 13 Oct (J. Dinsmore); 1 at Sweetwater Wetlands Park (*Alachua*) 21 Nov–EOS (R. Rowan).

Greater White-fronted Goose: 2 at The Villages (*Sumter*) 20 Oct–EOS (M. Pitcher); 1 at Saint Marks NWR (*Wakulla*) 24 Oct (D. Morrow).

Snow Goose: 1 at Flagler Hospital (*St. Johns*) 14–17 Nov (m. obs.).

American Wigeon: 11 at William E. Dunn WTF (*Pinellas*) 16 Nov (+M. James, C. Yilmaz).

*American Black Duck: 1 at Okaloosa County STF (*Okaloosa*) 14 Nov (R. Jamieson, M. Swan).

Mottled Duck: 1 at Blue Pond (*Lake*) 20 Sep (D. Richard).
Blue-winged Teal: 1 at Marine Corps Safety Facility (MCSF)-Blount Island (BI) Dayson Basin (*Duval*) 7 Aug (+J. Martin).
Northern Shoveler: 3 at Camp Blanding (*Clay*) 17 Sep (J. Graham).
Northern Pintail: 4 at Lake Tarpon (*Pinellas*) 20 Oct (+M. James).
Redhead: 1 at Wall Springs Park (*Pinellas*) 3–24 Aug (+B. Cochrane).
Ring-necked Duck: 2 at Lake Apopka Wildlife Drive 3 Aug–14 Oct (m. obs.).
Common Eider: 1 at Salt Run (*St. Johns*) 5 Aug (+S. Killeen); 1 at Ponce Inlet (*Volusia*) 23 Sep (+R. Wallace); 1 at Key West Garden Club (*Monroe*) 24 Nov (+A. Damm).
Surf Scoter: 2 at Camp Blanding 11 Nov (+J. Graham); 1 at Crystal River (*Citrus*) 16 Nov (E. Riccio, J. Meyer); 2 at Huguenot Memorial Park (*Duval*) 19 Nov (*fide* K. Dailey).
White-winged Scoter: 1 at Fort Walton Beach (*Okaloosa*) 3–11 Nov (C. Goodyear, P. Goodyear); 1 at Philippe Park (*Pinellas*) 18 Nov (+R. Smith, B. Kaempfer, S. Reardon).
Long-tailed Duck: 1 at Veteran's Memorial Park (*Pinellas*) 20–27 Nov (+D. Fraser).
Ruddy Duck: 1 at MCSF-BI Dayson Basin 7 Aug (+J. Martin).
American Flamingo: 1 at Saint Marks NWR 14 Oct–EOS (J. Groskopf, V. Roumi).
Horned Grebe: 1 at Black Point Wildlife Drive (*Brevard*) 10 Oct (E. Carter).
White-crowned Pigeon: 1 at Honeymoon Island SP (*Pinellas*) 25 Aug (+M. Friedman et al.).
White-winged Dove: 2 at Saint Marks NWR 19–20 Oct (J. Cavanagh).
Black-billed Cuckoo: 2 at Fort Pickens (*Escambia*) 23 Oct (B. Duncan, L. Duncan).
Groove-billed Ani: 1 at Fort Pickens 23 Oct (B. Duncan, L. Duncan).
Eastern Whip-poor-will: 1 at N Saint Petersburg (*Pinellas*) 13 Oct (R. Smith).
Chimney Swift: 56 at N Saint Petersburg 14 Oct (D. Love); 4 at Gulf Breeze (*Santa Rosa*) 2 Nov (B. Duncan, L. Duncan, S. Duncan).
*Antillean Palm-Swift: 1 at Sombrero Resort (*Monroe*) 30 Sep–EOS (L. Gles).
Black-chinned Hummingbird: 1 at Miccosukee (*Leon*) 27 Sep (B. Phelan).
Rufous Hummingbird: 1 at Spring Lake Hills (*Seminole*) 7–9 Oct (+P. Hueber, m. obs.); 1 male at Inverness (*Citrus*) 22 Nov–EOS (E. Smith).
*Calliope Hummingbird: 1 at Miccosukee Meadows (*Leon*) 18–20 Nov (H. Hooper).
Gray-headed Swamphen: 1 at Sweetwater Wetlands Park 22 Oct–23 Nov (R. Rowan et al.); 1 at Guana River WMA (*St. Johns*) 26 Oct (+A. Tanner).
Black-necked Stilt: Up to 75 at MCSF-BI Dayson Basin 23 Aug (+K. Dailey, D. Foster); 1 at Lake Apopka Wildlife Drive 15–28 Sep (J. Mileyka).
American Avocet: 19 at Fort De Soto Park (*Pinellas*) 14 Aug (+T. Ploger, N. Ploger); 5 at Caladesi Island SP (*Pinellas*) 27 Aug (W. Tallyn); 48 at Fort De Soto Park 24 Sep (+J. Groskopf); 25 at Fort De Soto Park 30 Nov (D. Lancaster).
American Golden-Plover: 3 at Lake Apopka Wildlife Drive 12–16 Sep (+S. Mary); 1 at Caladesi Island 6 Nov (+D. Sauvageau).
Semipalmated Plover: 1 at Webster (*Sumter*) 30 Aug–3 Sep (D. Richard).
Upland Sandpiper: 1 at Hornbeam Drive (*Seminole*) 24 Sep (S. Collins).
Whimbrel: 6 at Heritage River Road Wetlands (*Duval*) 10 Aug (K. Dailey).
Long-billed Curlew: 1 at S Anclote Key (*Pinellas*) 3 Oct (+D. Sauvageau); 1 at Honeymoon Island SP 16 Nov (+M. James et al.).
*Hudsonian Godwit: 1 at Big Talbot Island Spoonbill Pond (*Duval*) 20–22 Oct (K. Dailey).
Marbled Godwit: 1 at Heritage River Road Wetlands 1–8 Aug (K. Dailey); 1 at Orlando Wetlands Park (*Orange*) 5–9 Sep (+S. Mary, m. obs.).
Ruddy Turnstone: 1 at Lake Apopka Wildlife Drive 3 Aug (J. Leavens).
*Ruff: Up to 2 at Airport Road (*Palm Beach*) 3 Aug–4 Sep (m. obs.).
Stilt Sandpiper: 1 at MCSF-BI Dayson Basin 23 Aug (+K. Dailey, D. Foster); 1 at Orlando Wetlands Park 30 Aug, 5–7 Sep (+S. Carroll); 1 at Webster 12–15 Sep (D. Robbins, D. Richard, K. Lynn); 1 at Gainesville 29–31 Oct (C. Cattau); 2 at Gainesville (*Alachua*) 22 Nov (L. Hensley, C. Cattau).

Dunlin: 1 at Gainesville 29 Oct–5 Nov (C. Cattau); 1 at Paynes Prairie 14–27 Nov (C. Poli).

Purple Sandpiper: 1 at Huguenot Memorial Park 18–23 Nov (K. Dailey).

Baird's Sandpiper: 1 at Okaloosa County STF 11 Nov (R. Jamieson, G. Ross).

White-rumped Sandpiper: 3 at Orlando Wetlands Park 5–7 Sep (C. Newton, m. obs.).

Buff-breasted Sandpiper: 1 at CR 95 sod fields (*Flagler*) 25–27 Aug (*fide* K. Dailey); 1 at Guana Tolomato Matanzas NERR (*St. Johns*) 6 Sep (+C. Elder); 2 at Deep Creek Conservation Area (*St. Johns*) 7 Sep (m. obs.); 13 at Okaloosa County STF 8 Sep (M. Swan, B. Purdy et al.); 1–2 at Fort De Soto Park 18–23 Sep (+L. Margeson).

Pectoral Sandpiper: 2 at MCSF-BI Dayson Basin 23 Aug (+K. Dailey, D. Foster); 1 at Dunedin Causeway (*Pinellas*) 5 Aug (T. Malone); 1 at Treasure Island Beach (*Pinellas*) 21 Aug (+R. Smith, L. Smith); 3 at Outback Key (*Pinellas*) 11 Sep (+L. Margeson); 1 at Spring Hill 30 Nov (V. Ponzo, B. Pranty).

Western Sandpiper: 1 at Hague (*Alachua*) 1–22 Sep (D. Alvarez); 1 at Webster 13 Sep (D. Richard).

Short-billed Dowitcher: Up to 3 at Orlando Wetlands Park 29 Aug–9 Sep (+S. Mary).

Long-billed Dowitcher: Up to 4 at Orlando Wetlands Park 5–6 Sep (+P. Meharg).

Spotted Sandpiper: 25 at MCSF-BI Dayson Basin 23 Aug (+K. Dailey, D. Foster).

Solitary Sandpiper: 1 at Brighton Bay (*Pinellas*) 14 Aug (M. Burns); 2 at Fort De Soto Park 16 Aug (+R. Smith, L. Smith).

Wilson's Phalarope: 1 at Treasure Island Beach 21–22 Aug (+R. Smith, L. Smith); 1 at Orlando Wetlands Park 5–8 Sep (+P. Meharg); 1 at Fort De Soto Park 15 Sep (W. Scott).

Red-necked Phalarope: 350 offshore Playalinda Beach (*Brevard*) 18 Sep (+M. Harris); 35 at Eddy Creek (*Brevard*) 19 Sep (J. Eager, P. Mansfield); 120 offshore Ocean Shore Blvd (*Volusia*) 1 Oct (M. Brothers).

Red Phalarope: 30 offshore Tom Renick Park (*Volusia*) 6 Oct (S. Krah).

*Sabine's Gull: 4 offshore Playalinda Beach 19 Sep (+M. Harris); 1 offshore Playalinda Beach 28 Sep (J. Reijm); 1 offshore Playalinda Beach 6 Oct (C. Newton); 1 immature at Boynton Inlet Park (*Palm Beach*) 20 Sep (K. Matera).

Bonaparte's Gull: 2 at Pensacola Beach (*Escambia*) 26 Oct (J. Yuhasz); 40 at Eastman/Tamico Sanctuary (*Santa Rosa*) 28 Oct (L. Kelly, L. Goodman).

Laughing Gull: 5 at Lake Santa Fe (*Alachua*) 28 Nov (A. Kratter).

Franklin's Gull: 1 at Huguenot Memorial Park 12 and 27 Oct (+K. Dailey).

*Heermann's Gull: 1 juvenile at 12th Terrace/SR A1A, Indialantic (*Brevard*) 31 Aug–3 Oct (+A. Fay); 1 juvenile at Jetty Park (*Brevard*) 6–7, 15–27 Oct (+E. Peipert); 1 immature at Beach View Park southward to Crandon Beach (*Miami-Dade*) 19–25 Nov (m. obs.).

Lesser Black-backed Gull: 1 at Lake Santa Fe 28 Nov (A. Kratter).

Glaucous Gull: 1 at Huguenot Memorial Park 23–24 Nov (+K. Dailey).

Brown Noddy: 1 at Simpson Creek (*Duval*) 4 Sep (+D. Foster); 3 at Lighthouse Point Park (*Volusia*) 4 Sep (+D. Young, m. obs.); 1 at Sebastian Inlet SP (*Brevard*) 11 Sep (+W. Chatfield-Taylor); 1 offshore Playalinda Beach 18 Sep (M. Harris).

Sooty Tern: 1 at Huguenot Memorial Park 17–25 Aug (+*fide* K. Dailey); 4 at Newnans Lake (*Alachua*) 4 Sep (A. Kratter); 3 at Fort George Inlet (*Duval*) 4 Sep (+D. Foster), 6 at Heritage River Road Wetlands 4 Sep (D. Foster); up to 12 at S Atlantic Avenue (*Volusia*) 4 Sep (S. Loomis); 84 at Cassen Park (*Volusia*) 4 Sep (M. Brothers); 14 at Lighthouse Point Park 4 Sep (+L. Lilja); 1 at Black Point Wildlife Drive 20 Sep (M. Keith).

Bridled Tern: 12 at Fort George Inlet (+D. Foster); 1 at Heritage River Road Wetlands 4 Sep (D. Foster); 8 at Cassen Park 4 Sep (M. Brothers); 15 at Lighthouse Point Park 4–5 Sep (+L. Lilja).

Caspian Tern: 3 at MCSF-BI Dayson Basin 23 Aug (+K. Dailey).

Black Tern: 120 at Gandy Beach (*Pinellas*) 5 Sep (+J. Clayton); 1 at Lake Apopka Wildlife Drive 13 Sep (P. Hueber); 4 offshore New Smyrna Beach (*Volusia*) 14 Oct (M. Brothers).

Roseate Tern: 1 at Sebastian Inlet SP (*Indian River*) 24 Sep (+H. Gornto).

Common Tern: 525 at Treasure Island Beach 19 Oct (+R. Smith, B. Hoffman).

Royal Tern: 2 at Hague 3 Sep (C. Anderson); 2 at Newnans Lake 4 Sep (C. Poli, J. Marchionno); 1 at Lake Apopka Wildlife Drive 12 Oct (M. Richardson, m. obs.).

Sandwich Tern: 2 at Newnans Lake 4 Sep (A. Kratter); 1,075 at Gandy Beach 13 Oct (+R. Smith).

*Elegant Tern: 1 at Courtney Campbell Causeway (*Pinellas*) 19 Nov (+M. James).

Black Skimmer: 1 at Paynes Prairie Preserve SP (*Alachua*) 12 Aug (A. Kent, G. Kent).

Cory's Shearwater: 1 S of Perdido Pass (*Escambia*) 4 Aug (C. Dorgan); 1 offshore Tom Renick Park (*Volusia*) 6 Oct (+S. Krah); 2 (*scopolis's*) offshore New Smyrna Beach 14 Oct (M. Brothers); 6 offshore *Volusia* 14 Oct (M. Brothers).

Sooty Shearwater: 4 at Fort Pickens 26 Oct (L. Duncan, J. Yuhasz).

Great Shearwater: 2 at Pensacola Beach (*Escambia*) 1 Aug (J. Pfeiffer); 1 S of Perdido Pass 4 Aug (C. Dorgan); 13 at Fort Pickens 26 Oct (B. Callaway, L. Duncan); 1 at EAA Tabit Road and G2 Canal (*Palm Beach*) 4 Aug (+K. Miller); 3 found exhausted (all later died) along *Pinellas* beaches 8–17 Aug (+ *fide* R. Smith); 1 at Ocean Shore Blvd (*Volusia*) 2 Sep (M. Brothers); 1 at James Nance Park (*Brevard*) 21 Sep (B. Julius); 1 offshore Playalinda Beach 1 Oct (+M. Harris); 1 offshore Apollo Beach (*Volusia*) 6 Oct (D. LaGrange).

*Manx Shearwater: 1 at Pensacola Beach 26 Nov brought to Wildlife Sanctuary of NW FL (*Escambia*) where it died (specimen to Florida State Museum).

Audubon's Shearwater: 1 offshore gulf stream (*Volusia*) 14 Oct (M. Brothers); 118 at Fort Pickens 26 Oct (B. Callaway, J. Callaway, B. Duncan, L. Duncan, J. Yuhasz).

Wood Stork: 32 at Molino (*Escambia*) 19 Oct (J. Yuhasz); 11 at Eglin AFB (*Okaloosa*) 2 Nov (A. Moore).

Magnificent Frigatebird: 5 at N A1A (*St. Johns*) 24 Oct (+D. Reed); 2 at Playalinda Beach (*Brevard*) 27 Nov (J. Dinsmore).

Masked Booby: 1 adult at Pensacola Beach 21 Sep (T. Smith); 1 at N Saint Petersburg was taken to Seaside Seabird Sanctuary 15 Oct (*fide* R. Smith, +A. Nulph).

Brown Booby: 6 offshore *Volusia* 20 Sep (K. Eagle); 1 (adult on ship) offshore 85 miles *Volusia* 10 Oct (S. Schuette); up to 5 at Philippe Park 20 Oct–30 Nov (+B. Lane).

*Great Cormorant: 1 at Huguenot Memorial Park 11–12 Oct (+K. Dailey).

Anhinga: 41 at Blackwater River State Forest (*Santa Rosa*) 12 Sep (M. Lehmann).

American White Pelican: 1 at Big Lagoon (*Escambia*) 3 Aug (C. Tebay, E. Blomberg); 28 at Fort De Soto Park 7 Oct (P. Plage).

American Bittern: 1 at Mulberry Cove Marina (*Duval*) 17 Oct (+J. Graham).

Yellow-crowned Night-Heron: 1 at South Moon Camp (*Lake*) 4 Oct (D. Robbins).

Glossy Ibis: 2 at MCSF-BI Dayson Basin 7 Aug (+J. Martin).

White-faced Ibis: 1 at Gainesville 3–7 Oct (J. Donsky); 5 at Walnut Hill (*Escambia*) 8 Oct (J. Callaway, B. Callaway et al.); 1 at Okaloosa County STF 20 Oct (B. Purdy).

Roseate Spoonbill: Up to 8 at Gainesville throughout the season (C. Burney et al.); 3 at Saint Marks NWR 16 Nov (M. Smith).

Black Vulture: 100 at Okaloosa County STF 2 Nov (R. Jamieson).

Swallow-tailed Kite: Over 100 at *Pinellas* 1 Aug 2019 (+J. Swenfurth); 17 at Jeffco Dairy (*Jefferson*) 14 Aug (M. Smith).

Snail Kite: 1 at Lake Apopka Wildlife Drive 4 Aug, 8–15 Sep, 14 Oct (+L. Mathis); 1 juvenile male at Newton Park (*Orange*) 13 Aug (J. Thomton); 1 at Orlando Wetlands Park 6 Aug (+L. Gray); 1 at Bald Point SP (*Franklin*) 4 Sep (+J. Murphy); 1 at John Chesnut Park (*Pinellas*) 12 Oct–27 Nov (+M. Obordo); 1 at Fort De Soto Park 24 Oct (+J. Clayton); 1 at Ridge Manor (*Hernando*) 24 Nov (J. Mann, S. Mann).

Mississippi Kite: 1 at Cross Florida Greenway (*Citrus*) 20 Oct (D. Kaminski, J. Kaminski).

Broad-winged Hawk: 1 at Maritime Hammock Sanctuary (*Brevard*) 15 Aug (S. Wagner); 1 at Lake Lotus Park (*Seminole*) 12 Sep (C. Brelsford); 22 at Saint Petersburg Beach 22 Nov (+D. Roemer).

Short-tailed Hawk: 2 at Black Creek Park (*Clay*) 5–6 Aug (+J. Graham); 1 at Henry P. Leu Gardens (*Orange*) 12 Aug (J. Thomton); 1 at Gatorland (*Orange*) 14 Aug (+L. Brown); 1 at Macon Pkwy (*Orange*) 19 Aug (A. Zions); 1 at Wickham Court (*Seminole*) 22 Aug (+R. Stalnaker); 1 at Lake Lotus Park (*Seminole*) 31 Aug (+P. Meharg).

Swainson's Hawk: 1 at Tram Road Holding Ponds (*Leon*) 15 Nov (+D. Grimes).

Red-headed Woodpecker: 1 immature at Brooker Creek Preserve (*Pinellas*) 28 Sep (+E. Haney).

Peregrine Falcon: 1 at Saint Sebastian River Preserve SP (*Indian River*) 4 Sep (D. Simpson).

Monk Parakeet: 2 at US-1 Shopping Center (*St. Johns*) 6–11 Aug (D. Reed et al.); 2 at Huguenot Memorial Park 24 Sep (+A. Tanner); 2 at Alimacani Boat Ramp (*Duval*) 14–22 Nov (*fide* K. Dailey).

Blue-crowned Parakeet: 47 at NE Saint Petersburg 22 Aug (E. Plage).

Olive-sided Flycatcher: 1 at Gulf Breeze 30 Aug (B. Duncan); 1 at High Ridge Scrub Natural Area (*Palm Beach*) 4 Oct (m. obs.).

Eastern Wood-Pewee: Up to 6 at Sawgrass Lake Park 14–18 Aug (+R. Smith et al.); 31 at Fort De Soto Park 20 Oct (+R. Smith); 1 at Gulf Breeze 10–11 Nov (B. Duncan).

*Yellow-bellied Flycatcher: 1 at Shiloh Marsh Road (*Volusia*) 11 Oct (R. Wallace); 1 at Rotary Park (*Brevard*) 12 Oct (+J. Roche).

*Alder Flycatcher: 1 at Paynes Prairie Preserve SP 31 Aug–7 Sep (A. Zions, M. Manetz); 1 at 71 Coquina Ridge Way (*Volusia*) 2 Sep (M. Brothers); 1 at Gainesville 3 Sep (A. Zions, T. Anderson); 1 at Ocklawaha Prairie Restoration Area (*Alachua*) 8 Sep (D. Richard); 1 at Evinston (*Marion*) 21–29 Sep (S. Robinson); 2 at North Shore Trailhead (*Lake*) 7–13 Sep (+P. Hueber).

*Willow Flycatcher: 1 at Ocklawaha Prairie Restoration Area 8 Sep (D. Richard); 1 at North Shore Trailhead (*Lake*) 7–14 Sep (P. Hueber); 1 at International Paper Wetlands (*Escambia*) 13 Sep (J. Callaway, B. Callaway); 1 at 601 Ponce de Leon Blvd area (*Volusia*) 19–24 Sep (M. Brothers); 1 at Central Park (*Volusia*) 10 Oct (M. Brothers).

Least Flycatcher: 1 at Miccosukee Meadows (*Leon*) 22 Sep (H. Hooper); 1 at John Chesnut Park 4 Oct (+T. Mast); 1 at Rotary Park (*Brevard*) 12 Oct (+J. Roche); 1 at Paynes Prairie Preserve SP 14 Oct–EOS (M. Manetz); 1 at George McGough Park (*Pinellas*) 19–21 Oct (+J. Clayton); 1 at Possum Branch Preserve 20 Oct (+C. Yilmaz); 1 at Fort De Soto Park 20 Oct (A. Kratter); 1 at Egmont Key NWR (*Pinellas*) 20 Oct (E. Plage); 1 at Seminole yard (*Pinellas*) 21 Oct (+T. Knuth).

Vermilion Flycatcher: 1 at Saint Marks NWR 15 Oct–EOS (K. Miller); 1 at International Paper Wetlands 20 Oct (J. Callaway, B. Callaway); 1 at Fort De Soto Park 24–26 Oct (+D. Sauvageau); 1 at Fort Walton Beach 31 Oct–1 Nov (L. Endt, R. Jamieson); 1 at Veteran's Memorial Park (*Okaloosa*) 1 Nov (S. Hobson, M. Swan); 1 at Imeson Center 3 Nov provided the first *Duval* record (+C. Wainwright); 1 at Walnut Hill 18 Nov (B. Duncan, L. Duncan).

Ash-throated Flycatcher: 1 at Guana River WMA (*St. Johns*) 28 Oct (+C. Elder); 3 at Fort Pickens 2–3 Nov (B. Duncan et al.); 1 at Bald Point SP 8–9 Nov (+J. Murphy); 1 at Little Talbot Island SP (*Duval*) 10–11 Nov (+V. Colceriu); 1 at San Felasco Hammock (*Alachua*) 11–17 Nov (J. Donsky); 1 at Fort Pickens 18 Nov (R. Jamieson); 1 at Gulf Breeze 19–20 Nov (B. Duncan, L. Duncan, S. Jordan); 1 at Paynes Prairie Preserve SP 19–20 Nov (R. Rowan et al.); 1 at Watermelon Pond (*Alachua*) 23 Nov (J. O'Connor); 2 at Okaloosa County STF 25–30 Nov (B. Stanley, M. Swan et al.); 1 at *Clay* 24 Nov (+J. Graham); 1 at M&M Dairy 30 Nov (+D. Foster).

Great Crested Flycatcher: 1 at Eastman/Taminco Sanctuary 23 Oct (L. Kelly, L. Goodman).

Brown-crested Flycatcher: 1 at Paynes Prairie Preserve SP 10 Nov–EOS (R. Rowan, T. Camarata).

Western Kingbird: 1 at Gulf Breeze 10–11 Nov (B. Duncan, L. Duncan).

Eastern Kingbird: 1 at Gleason Park (*Brevard*) 12 Oct (C. Merrell); 1 at Fort Walton Beach (*Okaloosa*) 27 Oct (S. Hobson); 1 at Okaloosa County STF 31 Oct (R. Jamieson).

Scissor-tailed Flycatcher: 1 at Gulf Breeze 5 Oct (B. Duncan, L. Duncan, et al.); 1 at Ormond Beach (*Volusia*) 13 Oct (M. Brothers); 1 at Tierra Verde (*Pinellas*) 23 Oct (+P. Plage); 4 at Fort De Soto Park 23 Oct–12 Nov (*fide* R. Smith); 1 at Seminole 4 Nov (T. Knuth); 1 at Dell Holmes Park (*Pinellas*) 29 Nov (+B. Hoffman).

*Thick-billed Vireo: 3 (2 juveniles, 1 adult) at Long Key SP (*Monroe*) 21–22 Aug (L. Gles); 1 at Private back yard (*Palm Beach*) 11 Oct–2 Nov (G. Silverblatt).

Bell's Vireo: 1 at Paynes Prairie Preserve SP 26–29 Nov (K. Ducham et al.).

Blue-headed Vireo: 1 at Big Lagoon 17 Sep (C. Tebay).

Philadelphia Vireo: 1 at Mike Stone Soccer Complex (*Lake*) 24 Sep (D. Richard); 1 at Paynes Prairie Preserve SP 10 Oct (F. Goodwin); 1 at Green Mountain Scenic Overlook and Trailhead (*Lake*) 13 Oct (G. Quigley); 1 at Carambola Drive (*Brevard*) 14 Oct (+M. Harris); 1 at De Leon Springs SP (*Volusia*) 17 Oct (R. Wallace); 1 at Fort De Soto Park 17 Oct (+R. Smith); 1 at Bald Point SP 19 Oct (+J. Murphy); up to 5 at Fort De Soto Park 25 Oct (*fide* R. Smith); 2 at George McGough Park 3 Nov (D. Love).

Warbling Vireo: 1 at Indian River Lagoon Preserve SP (*Brevard*) 10 Oct (+M. Harris); 1 at Gulf Breeze 25 Oct (L. Duncan).

*Pied Crow: 1 continued at Little Big Econ SF (*Seminole*) 5 Aug (+G. Williams).

Purple Martin: 545 at Fort De Soto Park 16 Aug (+R. Smith, L. Smith).

Tree Swallow: 1 at Eastman/Taminco Sanctuary 5 Aug (L. Kelly, B. Furlow).

Northern Rough-winged Swallow: 2 at Sweetwater Wetlands Park 24 Nov (C. Poli).

Bank Swallow: 12 at Fort De Soto Park 3 Sep (J. Rosenfeld).

Cliff Swallow: 1 at Fort De Soto Park 17 Aug (+R. Smith); 2 at NE Saint Petersburg 17 Aug (+J. Clayton); 18 at Tierra Verde 26 Aug (E. Plage); 1 at Sweetwater Wetlands Park 16 Nov (R. Rowan et al.).

Cave Swallow: 1 at Northshore Beach (*Pinellas*) 16 Nov (+B. Hoffman).

White-breasted Nuthatch: 1 at Wakulla Springs SP (*Wakulla*) 1–3 Aug (J. Turner); 4 at Tallahassee (*Leon*) 11 Sep–10 Oct (S. Phillips).

Brown Creeper: 1 at Bald Point SP 17 Nov (+J. Murphy).

Golden-crowned Kinglet: 1 at Miccosukee Meadows 7 Nov (H. Hooper).

Swainson's Thrush: 1 at Spring Hill 7 Nov (A. Hansen, B. Hansen).

Wood Thrush: 34 at Fort De Soto Park 24 Oct (D. Gagne, S. Reardon).

Gray Catbird: 1 at Fort De Soto Park 3 Aug (M. Richardson).

Pin-tailed Whydah: 1 adult and 1 juvenile at Pace (*Santa Rosa*) 10–11 Aug (D. Stangeland); 3 at International Paper Wetlands 25 Nov (J. Callaway, J. Yuhasz).

American Pipit: 1 at Fort De Soto Park 13 Nov (+L. Margeson).

*Lapland Longspur: 2 at Huguenot Memorial City Park 18–22 Nov (+M. Charest); 1 at Alligator Point (*Franklin*) 25 Nov (+J. Murphy).

Ovenbird: 1 at Pensacola (*Escambia*) 2 Nov (J. Lloyd).

Worm-eating Warbler: 1 at Cantonment (*Escambia*) 2 Aug (M. Werdung); 2 at John S. Taylor Park 17 Aug (S. Aversa); 2 at Sawgrass Lake Park 18 Aug (+J. Clayton).

Northern Waterthrush: 2 at Largo Nature Preserve 15 Aug (S. Aversa, K. Duncan); 2 at Brooker Creek Preserve 30 Nov (+M. James).

Golden-winged Warbler: 15 in *Alachua* 24 Aug–20 Oct (B. Ewing, E. Amundson et al.); 1 at Orlando Park (*Brevard*) 27 Sep (J. Armstrong); 1 at Central Park 27 Sep (+A. Hull); 1 at Embry-Riddle Campus (*Volusia*) 27 Sep (S. Krah); 1 at Blue Springs SP (*Volusia*) 2 Oct (D. LaGrange); 1 at Nocatee Preserve (*St. Johns*) 13 Oct (M. Charest); 1 at Bald Point SP 19 Oct (+J. Murphy).

"Lawrence's Warbler": 1 at Sweetwater Wetlands Park 23 Oct (T. Hardin et al.).

Black-and-white Warbler: 1 at Gulf Breeze 9–10 Nov (B. Duncan, L. Duncan).

Swainson's Warbler: 1 at High Springs (*Alachua*) 12–22 Sep (M. Manetz et al.); 1 at Merritt Island NWR (*Brevard*) 21 Sep (T. Ledford); 1 at War Veterans' Memorial Park 26 Sep (C. Shavers); 1 at Joe's Overlook (*Indian River*) 29 Sep (D. Och); 1 at Mead Botanical Gardens (*Orange*) 30 Sep (+L. Mathis); 1 at Milton (*Santa Rosa*) 9 Oct (L. Kelly); 1 at Merritt Island NWR 15 Oct (+J. Armstrong); 1 at Fort Walton Beach 25 Oct (R. Jamieson).

Nashville Warbler: 1 at Lake Apopka Wildlife Drive 29 Sep (P. Hueber); 1 at Dunedin Hammock 10 Oct (+D. Fraser); 1 at Sawgrass Lake Park 10 Oct (R. Smith); 1 at Fort De Soto Park 10 Oct (+J. Clayton); 1 at Sweetwater Wetlands Park 15 Oct–EOS (R. Rowan et al.); 1 at Gulf Breeze 27–30 Nov (S. Duncan et al.).

Connecticut Warbler: 1 at *Alachua* 17 Oct (B. Wallace).

*Mourning Warbler: 1 at Port Orange Causeway Park (*Volusia*) 10 Oct (H. Robinson); 1 at Apollo Beach 12 Oct (T. Lee); 1 at Mike Stone Soccer Complex 15 Oct (D. Richard).

Kentucky Warbler: Up to 12 at 6 different *Pinellas* locations 18 Aug (*fide* R. Smith); 1 at Mead Botanical Gardens 26 Sep (L. Mathis).

Hooded Warbler: 1 at Gulf Breeze 9–12 Nov (B. Duncan, L. Duncan); 1 at Big Lagoon State Park (*Escambia*) 26 Nov (D. Horton).

American Redstart: 1 at Fort Pickens 13 Nov (R. Jamieson).

*Kirtland's Warbler: 1 at Playalinda Beach (*Brevard*) 1 Oct (+M. Harris).

Cape May Warbler: 3 at Gainesville 9–16 Oct (B. Ewing, C. Burney); 1 at Evinston 12 Oct (S. Robinson).

Cerulean Warbler: 1 at Sawgrass Lake Park 8 Aug (+J. Clayton, R. Smith, M. Burns); up to 4 at Sawgrass Lake Park 18–22 Aug (E. Plage, +J. Clayton); 1 at Boyd Hill NP 18 Aug (R. Smith); 1 at Gainesville 20 Aug (G. Parks); 1 at Black Creek Park (*Clay*) 11 Oct (J. Graham).

Northern Parula: 1 at Molino (*Escambia*) 16 Nov (J. Yuhasz).

Bay-breasted Warbler: Up to 21 at Fort De Soto Park 21 Oct (+D. Sauvageau); 1 at Lake Woodruff NWR (*Volusia*) 23 Sep (+T. Lee).

Blackburnian Warbler: 2 at Sawgrass Lake Park 12 Aug (+S. Tavaglione); 5–6 at Sawgrass Lake Park 18 Aug (E. Plage et al.).

Blackpoll Warbler: 1 at Melrose (*Alachua*) 17 Oct (K. Collingwood).

Black-throated Blue Warbler: 1 at Black Creek Park (*Clay*) 16 Aug (+J. Graham); 1 male at Crystal River 23–25 Oct (D. Kaminski).

Black-throated Green Warbler: 1 at Gulf Breeze 19 Nov (B. Duncan, L. Duncan).

Canada Warbler: 1 at John Chesnut Park 9 Sep (+ M. Majetschak); 1 at Boyd Hill Nature Preserve 25 Sep (+J. Clayton); 1 at Kathryn Abbey Hanna Park (*Duval*) 2–4 Oct (m. obs.); 1 at Newnans Lake 19 Oct (J. O'Connor, K. O'Connor).

Wilson's Warbler: 1 at Saint George Island SP 17 Sep (J. Murphy); 1 at Reed Canal Road (*Volusia*) 18 Sep (A. Hull); 1 at Shiloh Marsh Road (*Volusia*) 21 Sep (+V. Roumi); 1 at Wells Drive (*Volusia*) 1–2 Oct (A. Hull); 1 at Paynes Prairie Preserve SP 4–24 Oct (H. Jones, M. Walters et al.); 1 at Gainesville 10 Oct (T. Anderson, B. Shea).

Yellow-breasted Chat: 1 at Brooker Creek Preserve 12 Sep (+T. Mast); 1 at Fort Walton Beach 10 Nov (C. Wiley).

*Black-faced Grassquit: 1 at Blue Hole (*Monroe*) 1 Aug–20 Sep (m. obs.).

Clay-colored Sparrow: 1 at Cantonment 9 Oct (M. Lehmann); up to 3 at Apollo Beach 17 Oct (+D. LaGrange); 1 at Saint Marks NWR 20 Oct (D. Asbell, J. Cavanagh); 1 at Gulf Breeze 1 Nov (B. Duncan); 1 at Guana River WMA (*St. Johns*) 4 Nov (+C. Elder).

Vesper Sparrow: 3 at Brooker Creek Preserve 19 Nov (+T. Mast).

Lark Sparrow: 1 at Guana River WMA 8–12 Aug (+C. Elder); 1 at Gainesville 25 Aug (A. Zions); 1 at Bald Point SP 4 Sep (+J. Murphy); 1 at Deep Creek Conservation Area

(*St. Johns*) 7 Sep (m. obs.); 1 at Sand Key Park (*Pinellas*) 9 Sep (+J. Clayton); 1 at Six Mile Landing (*St. Johns*) 28 Oct (+D. Reed).

Lincoln's Sparrow: 1 at Saint George Island SP (*Franklin*) 16 Oct (+J. Murphy); 1 at Gulf Breeze 23 Oct (B. Duncan, L. Duncan); 1 at Masters Tract Stormwater Treatment (*St. Johns*) 3 Nov (+A. Tanner).

Dark-eyed Junco: 1 at GTM NERR (*St. Johns*) 18 Nov (C. Elder, +D. Reed).

Summer Tanager: 1 at Tallahassee 13 Sep–EOS (S. Phillips).

Scarlet Tanager: 1 at Spring Hill (*Hernando*) 20 Oct–1 Nov (A. Hansen, B. Hansen); 1 female at Gulf Breeze 13 Nov (B. Duncan, L. Duncan); 1 at Gainesville 28 Nov–EOS (L. Davis).

Western Tanager: 1 at Molino 14 Aug (J. Yuhasz); 1 at Losco Road (*Duval*) 11 Oct (*fide* K. Dailey); 1 at John Chesnut Park 15 Oct (J. Zarolinski); 1 at Tallahassee 15 Nov–EOS (+W. Adolph); 1 at Gainesville 24 Nov–EOS (S. Palmer).

Rose-breasted Grosbeak: Up to 47 at Fort De Soto Park 20 Oct (+E. Haney, +R. Smith).

Painted Bunting: 1 male at Lake Apopka Wildlife Drive 2 Aug (+S. Mary); 1 at Gulf Breeze 23 Sep (B. Duncan, L. Duncan); 1 female at Pensacola 7–12 Nov (M. McGahan).

Dickcissel: 1 at Jacksonville feeder (*Duval*) 6–7 Aug (+S. Bak); 1 at *DeSoto* residence 17 Sep (+J. Pipher); 2 at Orlando Wetlands Park 21 Sep (M. Keith); 1 at Saint Marks NWR 20 Oct (+M. Smith); 1 at Fellsmere House (*Indian River*) 17 Oct (D. Simpson).

Bobolink: 6 over Boyd Hill Nature Preserve 5 Oct (E. Plage, B. Hoffman); 1 at Gulf Breeze 23 Oct (B. Duncan, L. Duncan).

Yellow-headed Blackbird: 4 at Okaloosa County STF 5–13 Sep (R. Jamieson et al.); 1 at Lake Apopka Wildlife Drive 22 Sep (+D. Roorda); 1 adult male at John Taylor Park 18 Oct (+E. Kro).

Rusty Blackbird: Up to 3 at Gainesville 21 Nov–EOS (J. Mays et al.).

Brewer's Blackbird: 1 at Margaret Buschman Park (*Volusia*) 10 Oct (K. Ramos).

Shiny Cowbird: 1 at N Saint Petersburg feeder 25–27 Aug (+M. Burns) and then again 1 Oct–1 Nov (+M. Burns); 1 at Spring Hill 28 Oct (B. Morgan).

Bronzed Cowbird: 1–2 at N Saint Petersburg feeder 23–29 Aug (+M. Burns); 2 at Okaloosa County STF 8–9 Sep (B. Purdy, M. Swan et al.).

Orchard Oriole: 1 at John S. Taylor Park (*Pinellas*) 13 Aug (S. Aversa); 2 at Hague 2–3 Sep (R. Rowan, C. Anderson et al.).

Baltimore Oriole: 1 at Pensacola 18 Nov (J. White).

Acknowledgments

The Field Observations Committee would like to express deep appreciation to Ron Smith who is rotating off this volunteer role to focus on other pursuits. Ron has been a regular contributor to this report for many years and has served as a regional compiler focusing on Pinellas County since the Summer Report of 2013. Ron's reports have always been comprehensive, timely, and high-quality, and have added substantial weight and value to this report.

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IMPACT OF HYDRILLA ON USE OF THE LITTORAL ZONE BY THREE FORAGING WADING BIRDS IN CENTRAL FLORIDA

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Abstract.—Hydrilla (*Hydrilla verticillata*) is an invasive nonnative aquatic plant that can alter littoral plant communities by supplanting native species. Despite the negative effects of hydrilla, however, areas where it grows can have greater abundance and diversity of some invertebrate and fish species that are important forage for wading birds. We examined abundance and foraging of Great Egrets (*Ardea alba*), Little Blue Herons (*Egretta caerulea*), and Limpkins (*Aramus guarauna*) in relation to hydrilla presence in the littoral zone at four central Florida lakes during 2014–2015. Hydrilla was present at 49% of survey points, but we found no relationship to the number of birds observed or the presence of Great Egrets or Limpkins; we observed Little Blue Herons too infrequently to draw conclusions. We observed no significant differences in prey-capture efficiency between sites with hydrilla and those without hydrilla for Great Egrets or Little Bird Herons. We found significantly more captures by Limpkins in areas with hydrilla. Our study was somewhat constrained by small sample sizes, but our results suggest that hydrilla presence does not substantially affect the presence of Great Egrets or Limpkins or the foraging efficiency of Great Egrets and Little Blue Herons.

Key words: foraging, hydrilla, Kissimmee chain-of-lakes, limpkin, wading birds

Hydrilla (*Hydrilla verticillata*) is a macrophyte that was introduced into Florida from Sri Lanka in the early 1950s and has spread to lakes and rivers statewide (Sutton et al. 1980, Langeland 1996, Cuda et al. 2016). The Florida Exotic Pest Plant Council (FLEPPC) considers it a Category I plant or "an invasive that alters native plant communities by displacing native species or changing community structure and ecological functions" (FLEPPC 2015). Dense hydrilla infestations can negatively affect navigation and recreational activities, tourism,

property values, water quality, flood control, and native plant communities (Langeland 1996, Haller 2009). Dense canopies of hydrilla also can block air exchange, which can reduce oxygen levels and result in fish kills (Madsen 2009). State and local government agencies actively manage hydrilla via chemical and mechanical treatments to keep it from dominating lakes and having negative impacts on fish, wildlife, boaters, and the overall health of Florida's freshwater lakes.

The negative effects of hydrilla on native ecosystems can be profound, but hydrilla also has been found to be neutral or even beneficial to some fish and wildlife species in managed or controlled sites. For example, overall richness, diversity, and abundance of aquatic birds has been shown to be similar at lakes with and without hydrilla (Hoyer et al. 2008), and juvenile and forage fish density were significantly higher in areas with hydrilla than in areas of other macrophytes species (*Panicum hemitomon* and *Potamogeton illinoensis*) in Lake Okeechobee (Chick and McIvor 1994). Increased hydrilla densities were associated with increased numbers and diversity of invertebrates and increased survival of young largemouth bass (*Micropterus salmoides*) in a study in two central Florida lakes (Moxley and Lanford 1982). Ducks, American Coots (*Fulica americana*), and Pied-billed Grebes (*Podilymbus podiceps*) may also be more abundant when hydrilla is present (Esler 1990), as has been seen in the littoral zone of Lake Okeechobee (Johnson and Montalbano 1984).

There is little quantitative information on hydrilla occurrence at specific littoral sites used by Florida's 16 species of wading birds. One study on Lake Okeechobee reported foraging Snowy Egrets (*Egretta thula*) and Tricolored Herons (*Egretta tricolor*) regularly used dense surface mats of hydrilla, in combination with the leaves of lotus (*Nelumbo lutea*) and water hyacinth (*Eichhornia crassipes*), to provide support while foraging in deep water. Great Egrets (*Ardea alba*) also were observed in areas with mixed macrophyte species potentially including hydrilla, *Vallisneria*, and *Potamogeton* (Smith 1997). A greater understanding of wading birds' use of hydrilla would be beneficial for sound management of Florida lakes. The objectives of this study were to 1) determine if hydrilla was present and at what density in the littoral zone of central Florida lakes at sites used by Great Egrets, Limpkins (*Aramus guarauna*), and Little Blue Herons (*Egretta caerulea*) and 2) opportunistically monitor foraging by those species and compare capture efficiency at sites with and without hydrilla. The three focal species differ in their prey preference and water depth where they forage. Moreover, the Little Blue Heron is state-listed as Threatened (FWC 2013a) and the Limpkin was only recently removed from being state-listed (FWC 2013b). Understanding what role if any hydrilla has with habitat used by and foraging of these three species would aid in their conservation.

METHODS

We collected wading bird presence data on four lakes in central Florida where hydrilla has been documented: Lake Jackson, Lake Tohopekaliga, and Cypress Lake in Osceola County and Lake Kissimmee in Osceola and Polk counties (Fig. 1). We also collected foraging data at the four survey lakes, Lawne Lake in Orange County, and Lake Istokpoga in Highlands County (Fig. 1). The study lakes varied in size from 62.6 ha (Lawne Lake) to 12,915.5 ha (Lake Kissimmee), with a mean of 5,576.3 ha (SE = 2,297). All lakes were frequently used for fishing and other recreation, and all had some degree of shoreline development in the form of pastureland or housing.

We selected three wading bird species that occupy differing foraging niches in the littoral zone. Limpkins are primarily mollusks specialists, foraging on apple snails (*Pomacea* spp.) and freshwater mussels (Bryan 2002). Recent studies have linked Limpkin range expansion to nonnative apple snail and hydrilla expansion (Smith et al. 2019). Nonnative apple snails are described as voracious consumers of hydrilla (Baker et al. 2010) and Limpkin prey on the nonnative snails. Limpkins forage in shallow water (0.1–18.5 cm; T. A. Dellinger, *pers. obs*) and are known to walk and forage on mats of floating vegetation that can support their weight in deeper water (Bryan 2002, Hoyer 2009). Little Blue Herons forage at water depths similar to those used by Limpkins (5–15 cm), but instead of snails, they capture small fish, amphibians, and invertebrates (Rodgers and Smith 2012). Great Egrets are opportunistic hunters of fish, crustaceans, amphibians, reptiles, birds, and small mammals (McCrimmon et al. 2011), and their longer legs allow them to forage in depths of up to approximately 28 cm (Powell 1987).

We examined the number of wading birds as a function of hydrilla presence at four survey lakes during July–September 2014 and June 2015. We established fixed points at each lake (Fig. 1). Points were located one kilometer apart in the littoral zone and reached from an airboat. Water depth varied at the fixed points, so if the depth at a point was >50 cm, we steered the airboat toward the shore perpendicular to the point until we reached a depth of ≤50 cm. This shallow depth allowed us to still navigate the airboat yet see the complete 300-m view of the littoral zone and shoreline. Upon arrival at each point, we waited 5 min before beginning the survey to allow birds to return after we turned the airboat's engine off (Gawlik and Rocque 1998). At the start of the survey, we broadcast a recording of a Limpkin vocalization three times over a 20-s period, after which we conducted a 10-min survey, recording the presence of any individuals of the three focal species within 300 m of the point. We determined line-of-sight distances with a laser rangefinder (Bushnell Corporation, Overland, Kansas) and water depth with a stream gauge. We surveyed between an hour after sunrise and 1400 hours. After each survey we quantified hydrilla cover in a 100.3-m^2 circular plot. We established the circular plot to either side of the airboat and defined it with two 11.3-m floating ropes that crossed in the middle at right angles, positioned such that one rope was parallel to the shoreline, and secured the ropes to vertical rebar pushed into the lake bottom. We then assessed if hydrilla was present or absent at the plot center, and at four evenly spaced intervals along the ropes. Where present, we categorized the density of hydrilla as sparse (≤33%), moderate (34–67%), or dense (>67%). We averaged the nine values to characterize the water depth and hydrilla presence at the survey location. We attempted to repeat the wading bird survey at each point at least twice over the course of the study to increase the sample size and because hydrilla presence can vary from month to month.

To determine whether the density of hydrilla in the 100.3-m^2 circular plot represented hydrilla presence in the larger area around the survey point, we compared hydrilla amounts in the circular plot to foraging observation locations, see below. A post hoc comparison included circular plot measurements and foraging observation measurements that had been collected on the same day and were within 300 m of each other.

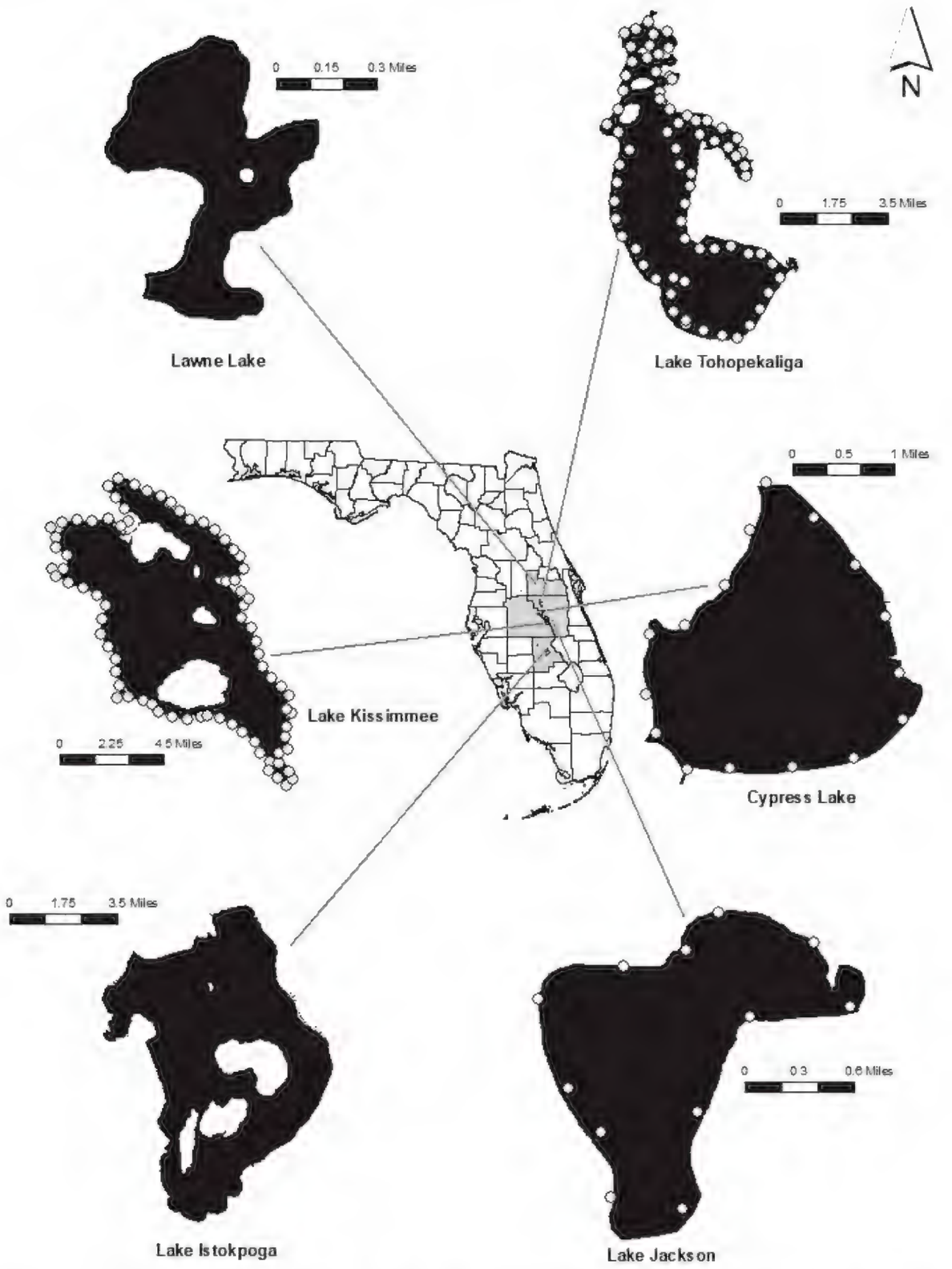

Figure 1. Locations of study lakes in Highlands, Orange, Osceola, and Polk counties used during foraging observations of Great Egrets, Limpkins, and Little Blue Herons in 2014–2015. We used the survey points depicted on Cypress Lake and lakes Jackson, Kissimmee, and Tohopekaliga for focal species surveys in 2014–2015.

We collected capture efficiency data opportunistically in the littoral zones at Cypress Lake, Lawne Lake, and lakes Istokpoga, Jackson, Kissimmee, and Tohopekaliga during March–December 2014 and January–June 2015. We observed birds for 5 min and noted

any strikes and captures. From this, we calculated capture efficiency for Great Egrets and Little Blue Herons. Capture efficiency is the ratio of the number of captures of prey items to the number of strikes. Because Limpkins primarily hunt slow-moving mollusks, we assumed a high capture efficiency and recorded only the number of captures during the 5-min observation. We measured habitat characteristics at each foraging location following the observation period and after the bird had moved to a new location. We quantified hydrilla presence at the site by tossing a 1-×1-m square, made of 2.5-cm-diameter polyvinyl chloride (PVC) pipe, over our shoulder three times, each time assessing the hydrilla presence in the square. We averaged the three values for each foraging location to characterize hydrilla presence. We collected water depth at approximately half of the locations to help describe foraging sites.

We built generalized linear mixed models assuming a negative binomial distribution to assess the impact of hydrilla presence and density on the abundance of wading birds observed during the observation periods. We also built generalized linear mixed models, assuming a binary distribution, to assess the impact of hydrilla presence on the presence of Great Egrets and Limpkins. In each of these models, we included lake as a random effect to account for random variability between lakes. We also included the observation period within a lake as a random effect to account for multiple sampling sessions within each lake. We performed all analyses in SAS (SAS Institute 2003) using the GLIMMIX procedure. We used Student's t-tests to make the following comparisons: prey-capture efficiency of Great Egrets and Little Blue Herons between locations with and without hydrilla, and number of prey captured by Limpkins between locations with and without hydrilla.

RESULTS

Focal species surveys.—We surveyed 148.1 km of shoreline in the littoral zone of the four lakes during 2014 and 2015. We surveyed 81 points at Lake Kissimmee, 77 points at Lake Tohopekaliga, 16 points at Cypress Lake, and 12 points at Lake Jackson. Cypress Lake and Lake Jackson could be surveyed in a day, so we repeated the survey at each point three times. It took several days to survey lakes Kissimmee and Tohopekaliga, however, so we surveyed points up to two times. We omitted surveys at points (n = 32) where the shoreline was blocked by vegetation such as cattails. Our overall survey effort totaled 154 points, 88 (57%) of which were surveyed twice and 29 (19%) of which were surveyed 3 times. Time between repeated surveys ranged from 42–359 days. Points were located an average of 72.9 m (range = 1–384 m; SE = 4.71) from the nearest landscape structure such as shoreline, tree line, tussock, or floating mat. Sixty-four percent of the points were in emergent vegetation and 36% were in open water without emergent vegetation. The average water depth at points was 43.0 cm (SE = 1.1; range = 10.2–107.4 cm). Water depth was >50 cm at some points because of an irregular or sloping lakebed in the plot area. Hydrilla was present at 45% of the survey points; however, we characterized only 4% of those survey points as having dense amounts and 12% as having moderate hydrilla amounts. Given the majority of points with hydrilla were characterized as having only a sparse amount, we focused

analyses on only presence and absence of hydrilla. We documented that hydrilla density increased or decreased over the course of the study at 75 (64%) of the 117 points with repeated surveys .

We observed focal species at 148 (95%) of the 154 survey points. Overall, we observed 158 Great Egrets, 80 Limpkins, and 17 Little Blue Herons at the survey points. We detected birds at distances of 12–300 m (mean = 123.06 m, SE = 5.13) from survey points. Our use of airboats affected foraging wading birds, which are typically quick to disperse in response to such disturbance. Nevertheless, birds often resettled and resumed foraging during the 5-min quiet period, and Limpkins were often immediately responsive to the playback. Hydrilla was absent from 77 (52%) of the 148 points at which we observed birds. There was no difference in the number of birds observed at points where hydrilla was present versus those where hydrilla was absent ($F_{1,289} = 0.00$, $P = 0.99$).

Overall, we observed 88 Great Egrets at survey points without hydrilla and 70 at points with hydrilla. We observed 49 Limpkins at points without hydrilla and 31 at points with hydrilla. We observed 11 Little Blue Herons from points without hydrilla and 6 from points with hydrilla. The presence of Great Egrets and Limpkins did not differ between points with hydrilla and those without it (Great Egret: $F_{1,289} = 0.34$, $P = 0.56$; Limpkin: $F_{1,289} = 0.92$, $P = 0.34$). The small sample of Little Blue Heron observations precluded statistical comparisons.

Because of logistical constraints, we rarely measured hydrilla densities at foraging locations and survey circular plots on the same day. However, seven wading bird foraging locations allowed comparison because they were within the 300-m survey area and the hydrilla density was measured on the same day as the survey circular plot. Six of 7 (86%) had the same hydrilla density, including the foraging location that was the farthest away (148 m) from the circular plot.

Prey-capture efficiency.—We observed 112 foraging bouts. We occasionally recorded water depths greater than the maximum known foraging depth for each species because of floating mats of vegetation supporting the birds or because the PVC square was randomly tossed over fish bedding holes. Hydrilla was present at 50% (n = 24) of the 48 locations at which we observed Great Egrets foraging. We observed Great Egrets wading and walking on floating mats while foraging, and the average water depth at their foraging locations was 45.6 cm (n = 18; range = 18–120 cm; SE = 0.08). Mean capture efficiency for Great Egrets was similar between sites with hydrilla (0.49; SE = 0.05) and sites without it (0.62; SE = 0.07; $t = 1.53$, $P = 0.13$).

Hydrilla was present at 35% (6 out of 17) of locations where we observed Little Blue Herons foraging, and mean capture efficiency was similar between sites with hydrilla (0.63; SE = 0.12) and without it

(0.60; SE = 0.09; t = –0.21, P = 0.84). We observed Little Blue Herons foraging while wading and walking on floating mats and emergent vegetation and the average water depth at foraging locations was 36.2 cm (n = 10; range = 7–70 cm; SE = 0.06).

Limpkins accounted for 45 of the foraging observations. Hydrilla was present at 42% (n = 19) of the locations at which we observed Limpkins foraging. Mean number of captures at sites with hydrilla was 2.47 (SE = 0.61; range: 0–12), versus a mean of 1.04 (SE = 0.18; range: 0–3) captures at sites without hydrilla (t = 1.44, P = 0.03). We observed Limpkins capturing prey during 18 of 19 (95%) foraging observations in areas with hydrilla, compared to 17 of 26 (65%) of observations in areas without hydrilla. We observed Limpkins foraging while wading or walking on floating mats, and the average water depth was 36.8 cm (n = 10; range = 3–136 cm; SE = 0.13); 60% of measured locations were in water <24 cm deep.

DISCUSSION

Hydrilla in lakes or reservoirs can be beneficial to birds (Montalbano et al. 1978, Mulholland and Percival 1982, O'Meara et al. 1982, Johnson and Montalbano 1984, Esler 1990), be detrimental (Wilde et al. 2005), or have no discernable effects (Hoyer et al. 2008). Our study found that presence or absence of hydrilla had no discernible direct effect on the presence of Great Egrets or Limpkins. We were not able to assess the importance of hydrilla density on foraging birds because too few of our sites had moderate or dense hydrilla. As such, we cannot provide information on how dense hydrilla matting, which managers often target for removal, affects foraging birds. Further research that focuses specifically on high-density hydrilla patches is warranted. Wildlife management goals based on specific hydrilla densities would be much more practical than any based on presence/absence, especially because of the difficulty of eliminating the species in lakes where it is well established.

We found that foraging efficiency of Great Egrets and Little Blue Herons did not differ between sites with or without hydrilla. Wading birds prefer littoral zones with macrophytes over open water (Lantz et al. 2010), and whether the vegetation is native or nonnative may be less important than whether it provides the appropriate structure and resources for the birds' prey. Limpkin abundance also did not differ between sites with or without hydrilla; however, prey captures by Limpkins were significantly different. We observed Limpkins capturing prey at 95% of the foraging locations with hydrilla, compared to 65% of the foraging locations without hydrilla. Baker et al. (2010) documented heavy consumption of hydrilla by nonnative island apple snails, and

Monette et al. (2017) reported that hydrilla was the common factor among sites inhabited by nonnative, but not native, apple snails. Smith et al. (2019) suggested that expanding hydrilla provides food for an increasing nonnative apple snail population that has in turn allowed Limpkins to expand their range north in Georgia; thus, population growth of the three species may be intrinsically linked.

We recommend interpreting our results with caution because of the small number of observations of the focal species, especially Little Blue Herons; a greater number of observations may provide more insight into how the presence of hydrilla affects bird behavior. We also assumed that hydrilla at our survey points was representative of the habitat in which nearby birds were foraging. This was generally true at the small number of points at which we had data for a survey point and nearby foraging birds, and our approach to measuring hydrilla was consistent with that used by lake managers. Nevertheless, the point vegetation measurements may not always have been representative of hydrilla in the area because we did observe some patchiness in the presence of hydrilla within the 300-m count radius. Regardless, our study should have detected a relationship between hydrilla presence and the presence of wading birds if the effect size had been substantial. Future research that better assesses hydrilla density rather than presence, and a more refined characterization of the overall macrophyte community and its effect on foraging birds, will better inform lake managers how their activities affect Florida's wading bird community. Regardless, the lack of a negative effect of hydrilla on wading birds that we observed here should be contextualized within the pervasive negative impacts that hydrilla can have on native plant communities and the overall health of Florida's lakes.

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OBSERVED ABNORMALITIES OF THE ENDANGERED KEY LARGO COTTON MOUSE (*Peromyscus gossypinus allapaticola*)

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The Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*) is a subspecies of cotton mouse endemic to the island of Key Largo, Florida, and is the only *Peromyscus* species present in the Florida Keys (Schwartz 1952). Because of habitat loss, habitat degradation, and overall population decline, the subspecies was listed as endangered by the United States Fish and Wildlife Service in 1984 (U.S. Department of the Interior 1973, U.S. Fish and Wildlife Service 1984, Hersh 1981, Barbour and Humphrey 1982, Keith and Gaines 2002). Presently, approximately 790 ha of 945 ha of tropical hardwood hammock remaining on the northern half of Key Largo are suitable for the Key Largo cotton mouse and occur almost exclusively within protected public lands at Crocodile Lake National Wildlife Refuge and Dagny Johnson Key Largo Hammock Botanical State Park (Ross et al. 1995, Keith and Gaines 2002).

Information on natural history and population ecology of the Key Largo cotton mouse is limited (Barbour and Humphrey 1982, Humphrey 1988, Sasso and Gaines 2002, Greene et al. 2013). To assess population status and inform recovery efforts, we initiated a long-term monitoring program in 2007 (Greene et al. 2013). Herein, we report on several abnormalities observed from 4 of 798 individual Key Largo cotton mice captured during 5 years of live-trapping surveys (2007–2011). We conducted capture and handling under United States Fish and Wildlife Service Endangered Species Permits (TE139405-0 and -1, TE137411-0, and TE233262-0); a Florida Fish and Wildlife Conservation Commission Permit (WV06293); Florida Department of Environmental Protection Division of Recreation and Parks Research and Collecting Permits (5-07-20, 5-08-34, 5-11-02, and 5-12-09); and a University of Georgia Institutional Animal Care and Use Permit (A2006-10206-m1).

On 23 March 2007, we captured an adult male missing its front left leg (UTM 17R 569001.50 E, 2792679.49 N; Fig. 1A). It is unknown if the mouse was born without this limb or sustained an earlier injury. The mouse lacked hair where the limb would have attached to the body and showed no sign of recent trauma such as scarring. When released, this mouse moved quickly and capably across the forest floor, showed no other health issues, and was of normal weight (29.0 g, 32.0 g, and 33.0 g for all three captures, respectively). We recaptured this individual on 8 and 9 November 2007 <14 m from the point of first capture.

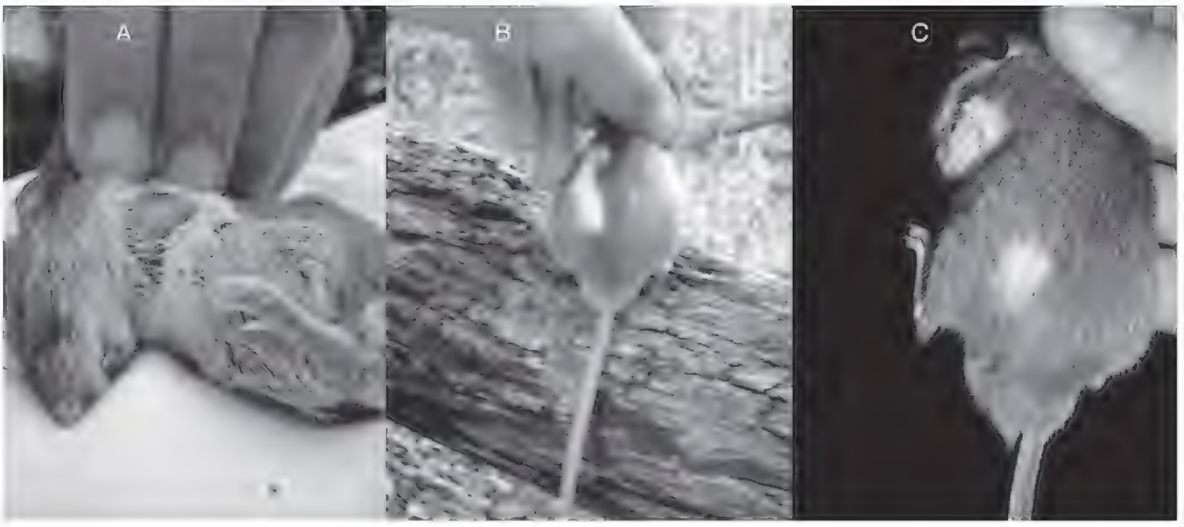

Figure 1. A male Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*) with its left front leg missing (A), and two males with hypopigmented marks (B and C), north Key Largo, Florida.

From 2007 through 2011, we captured three adult males with areas of hypopigmented fur (i.e., white spots). We captured two of these mice at Crocodile Lake National Wildlife Refuge, one with an elongated white mark to the left of the spine (4 March 2007; 32.0 g; UTM 17 R 570851.86 E, 2799259.70 N; Fig. 1B) and the other with a white patch in the same area, closer to the rump (27 November 2007; 33.0 g; UTM 17 R 568583.35 E, 2791975.64 N; Fig. 1C). We captured the third mouse at Dagny Johnson Key Largo Hammock Botanical State Park on 5 December 2011; it had white spotting on the rostrum near the vibrissae (34.25 g; UTM 17R 566819.9817 N, 2789096.68 E; not photographed). We are unaware of other records of wild *Peromyscus* with missing limbs. White patches of fur have been reported for several species of *Peromyscus*, including white-footed mouse (*P. leucopus*) and deer mouse (*P. maniculatus*; e.g., Sumner 1932, Feldman 1936). To our knowledge, our observations of hypopigmentation are the first for the Key Largo cotton mouse and possibly for the species.

The findings and conclusions in this article are those of the authors and do not necessarily represent the views of the U.S. Fish and Wildlife Service.

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RECORDS OF THE "WESTERN FLYCATCHER" IN FLORIDA, WITH EMPHASIS ON A VOCAL INDIVIDUAL THAT UTTERED CALL-NOTES CONSISTENT WITH PACIFIC-SLOPE FLYCATCHER (*Empidonax difficilis*)

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In 1989, members of the American Ornithologists' Union Check-list Committee (American Ornithologists' Union 1989) agreed that the Western Flycatcher (*Empidonax difficilis*) complex consisted of two species: the Pacific-slope Flycatcher (*E. difficilis*) and the Cordilleran Flycatcher (*E. occidentalis*). These former subspecies were elevated to species status based on Johnson (1980) and Johnson and Marten (1988), who reported on apparent genetic and vocal differences and assortative pairing. However, Johnson (1980, 1994) found a mixed population breeding in northern California, and Rush et al. (2009) found hybridization and introgression in southwestern Canada. These discoveries have led some ornithologists to suggest that the two taxa should not have been elevated to separate species. Outside of the hybrid zones, however, Pacific-slope Flycatchers and Cordilleran Flycatchers maintain separate populations, with consistent genetic and vocal differences (Rush et al. 2009).

The "Western Flycatcher" was not known to occur in Florida until recently (Robertson and Woolfenden 1992, Stevenson and Anderson 1994, Greenlaw et al. 2014). Pranty (1996) cited a probable report at Gulf Breeze, Santa Rosa County, Florida, on 28 December 1995 by Bob, Lucy, and Scot Duncan. The first verifiable record was thought to have been discovered in 2015, but an earlier, unpublished record, dating to 2004, was posted to eBird ten years later. With additional records later in 2015 and in 2020, there now are four known records of the "Western Flycatcher" complex from Florida. We detail these records here.

Previous records.—One silent individual was photographed at Fort De Soto Park, Pinellas County, on 31 October 2004 by Lyn Atherton. This record, which was never published formally or submitted to the Florida Ornithological Society Records Committee (FOSRC; A. W. Kratter in litt.), was posted to eBird by Ron Smith (2014) in December 2014.

One silent individual was photographed in a residential yard in Tallahassee, Leon County, on 8 January 2015 by Elliot Schunke (2015). The bird foraged on the ground and from a perch less than 30 cm above the ground. This record was accepted by the FOSRC (#2015-1063) as a "Western Flycatcher," and was thought at the time to represent the first record from Florida (Greenlaw 2016).

One silent individual was photographed at Fort Pickens, Gulf Islands National Seashore, Escambia County, on 1 October 2015 by Brenda and Jerry Callaway (2016).

Also present the following day, this individual was accepted by the FOSRC (#2016-1093) as a "Western Flycatcher" and was thought at the time to represent the second record from Florida (Kratter 2018).

The 2020 record.—On 10 March 2020, DF was exploring Mike Roess Gold Head Branch State Park in Keystone Heights, Clay County, Florida. Along a trail near the ravine overlook, he encountered a flock of small passerines that included a yellowish *Empidonax* flycatcher. DF obtained one photograph of the flycatcher before he lost sight of it, and posted this photograph and a description to an eBird checklist (Fraser 2020) and to the "Florida Birding and Rarities" Facebook page. Rex Rowan and BP independently posted DF's photograph and description to the "Frontiers of Bird Identification" listserv and requested commentary. Plumage characteristics that pointed to the bird being a member of the "Western Flycatcher" complex rather than a Yellow-bellied Flycatcher (*E. flaviventris*) included the peaked crown, moderate primary extension, long tail, and very narrow distance between the bottom of the lower wingbar and the pale fringing on the secondaries (Baumann et al. 2014). The potential for the Clay County flycatcher to represent a "Western Flycatcher" encouraged dozens of birders, including the three of us, to visit the park and to obtain better photographs (Fig. 1) and audio recordings (Fig. 2). The flycatcher was seen near the ravine overlook daily through 22 March 2020, after which all state parks were closed because of the worldwide COVID-19 pandemic.

Habitat and behavior.—The Clay County "Western Flycatcher" was found in the ecotone between xeric longleaf pine (*Pinus palustris*)–oak (*Quercus* spp.) sandhills and mesic deciduous forest surrounding a stream-fed ravine. It foraged at heights of 0.4 m to ~7.5 m above ground, sallying from perches to capture flying insects. It would be visible for usually short periods before flying off and not being found again, often for several hours. Although most readily found during the morning (typically after 0800, when the park opened to non-camping visitors), the flycatcher could be viewed throughout the day. It associated with a wintering flock of landbirds that included Downy Woodpecker (*Picoides pubescens*), Blue-gray Gnatcatcher (*Polioptila cerulea*), Ruby-crowned Kinglet (*Regulus satrapa*), Black-and-white Warbler (*Mniotilta varia*), Palm Warbler (*Setophaga palmarum*), and Yellow-rumped Warbler (*S. coronata*). On 14 March, a presumed pair of White-eyed Vireos (*Vireo gilvus*) chased the flycatcher out of their territory.

Vocalizations.—Usually during mornings, the flycatcher often uttered a short, single-noted, upslurred call termed a male position note (usually uttered by males but sometimes by females; Sibley 2002, D. Sibley in litt.). A spectrogram (Fig. 2) of a male position recorded by BP on 14 March shows a single, continuous note that ascends, then slightly descends before ascending again. This spectrogram signature, including the ladle shape (Johnson 1994) or kink (Pieplow 2011) in the center, is typical for Pacific-slope Flycatcher. In contrast, the male position note of a Cordilleran Flycatcher consists of two notes separated by a very brief pause, or break (Johnson 1994, McCallum 2005, Pieplow 2011, N. Pieplow in litt.).

Records in eastern North America.—In a non-exhaustive search that relied primarily on eBird, we found 37 records of "Western Flycatchers" in eastern North America, with the first occurring in 1991 (Table 1). Most of these records (n = 22; 59%) either were not identified to species, or were identified solely from photographic or audio evidence, which may not be definitive. Seven flycatchers, all from Louisiana, were collected individually and determined to represent five Pacific-slope Flycatchers and two Cordilleran Flycatchers (Table 1, but see Discussion). Records based on DNA collected from fecal samples in New York and Connecticut suggested that two other flycatchers were Pacific-slope Flycatchers (Table 1).

Discussion.—Whether or not the Pacific-slope Flycatcher and Cordilleran Flycatcher should continue to be recognized as distinct species is well beyond the scope of this paper. Outside the hybrid zones, the two taxa are genetically and vocally distinct, but within the contact zones, individuals may utter vocalizations that are intermediate or may

Figure 1. "Western" Flycatcher at Mike Roess Gold Head Branch State Park, Clay County, Florida, on 16 March 2020. Note the peaked crown (A), the eyering that is faint or absent above the eye and teardrop-shaped behind the eye (A, B), and the moderate primary extension (B). The upperparts were olive with a white eyering, and the underparts were yellow (varying according to lighting conditions) with a somewhat darker vest. The lower mandible was entirely yellowish-orange. The flycatcher uttered male position notes that are consistent with a Pacific-slope Flycatcher or an individual from the Pacific-slope Flycatcher–Cordilleran Flycatcher hybrid zone; more precise identification of this individual is not possible. Photographs by Mitchell Harris.

Table 1. Records (n = 37) of "Western Flycatchers" in eastern North America, which we define as the area eastward from the western boundaries of Ontario, Minnesota, Iowa, Missouri, Arkansas, and Louisiana. We include only records verifiable from published evidence (photographs, specimens, or spectrograms of vocalizations). Individuals were identified as Cordilleran Flycatcher (n = 2) or Pacific-slope Flycatcher (n = 13) or were either not identified to species or were identified solely from photographic or spectrogram evidence (n = 22). We accepted all original identifications as published or as accepted by members of the relevant bird records committees or eBird reviewers. Records are listed geographically, from Iowa and Louisiana east to Florida, then north to Nova Scotia. In the evidence column, LSUMZ numbers refer to specimens in the collection of the Louisiana State University Museum of Natural Science. eBird checklists are listed in the Reference column as an eight-digit number preceded by S; to access an eBird checklist online, type into a browser ebird.org/checklist/ followed by the checklist number beginning with S.

Published identification	Location	State or Province	Date(s)	Evidence	Reference
Pacific-slope/Cordilleran Flycatcher	Warren	Iowa	14–15 Nov 1992	Photographs	Brock (1993), Kent (1994)
Pacific-slope Flycatcher	Acadia	Louisiana	21–23 Dec 1994	Specimen LSUMZ 159809	Stedman (1995), D. Dittmann (in litt.)
Pacific-slope/Cordilleran Flycatcher	Acadia	Louisiana	27 Dec 2019	Photographs	S62683584
Pacific-slope Flycatcher	Cameron	Louisiana	28 Apr 1991	Specimen LSUMZ 152085	Muth (1991), D. Dittmann (in litt.)
Pacific-slope/Cordilleran Flycatcher[a]	Cameron	Louisiana	28–29 Oct 1995	Specimen LSUMZ 162199	Jackson (1996), D. Dittmann (in litt.)
Pacific-slope Flycatcher	Cameron	Louisiana	3 Oct 2009	Specimen LSUMZ 184921	S48995464, D. Dittmann (in litt.)
Pacific-slope Flycatcher	Iberville	Louisiana	20 Oct 2015	Specimen LSUMZ	S63605879, D. Dittmann (in litt.)
Pacific-slope Flycatcher	Iberville	Louisiana	20 Oct 2015–14 Jan 2016	Specimen LSUMZ	S63605879, D. Dittmann (in litt.)
Pacific-slope Flycatcher	Iberville	Louisiana	12 Jan 2020	Specimen LSUMZ	S63336502, D. Dittmann (in litt.)
Pacific-slope/Cordilleran Flycatcher	Jefferson	Louisiana	22 Sep 2015	Photographs	S26698045
Cordilleran Flycatcher	Jefferson	Louisiana	28 Dec 2010	Audio	S21582655

[a]One Louisiana specimen (LSU162199) was originally accepted as a Cordilleran Flycatcher but has been reevaluated and is likely to be accepted by the Louisiana Bird Records Committee as a Pacific-slope Flycatcher (D. Dittmann in litt.).

Table 1. (Continued) Records (n = 37) of "Western Flycatchers" in eastern North America, which we define as the area eastward from the western boundaries of Ontario, Minnesota, Iowa, Missouri, Arkansas, and Louisiana. We include only records verifiable from published evidence (photographs, specimens, or spectrograms of vocalizations). Individuals were identified as Cordilleran Flycatcher (n = 2) or Pacific-slope Flycatcher (n = 13) or were either not identified to species or were identified solely from photographic or spectrogram evidence (n = 22). We accepted all original identifications as published or as accepted by members of the relevant bird records committees or eBird reviewers. Records are listed geographically, from Iowa and Louisiana east to Florida, then north to Nova Scotia. In the evidence column, LSUMZ numbers refer to specimens in the collection of the Louisiana State University Museum of Natural Science. eBird checklists are listed in the Reference column as an eight-digit number preceded by S; to access an eBird checklist online, type into a browser ebird.org/checklist/ followed by the checklist number beginning with S.

Published identification	Location	State or Province	Date(s)	Evidence	Reference
Pacific-slope Flycatcher	Lafayette	Louisiana	29 Dec 1995–4 Jan 1996	Photographs	S5977679
Cordilleran Flycatcher	Plaquemines	Louisiana	26 Jan 1994	Specimen LSUMZ 159810	Stedman (1994), D. Dittmann (in litt.)
Pacific-slope/Cordilleran Flycatcher	Plaquemines	Louisiana	26 Jan 2019	Photographs	S52073924
Pacific-slope/Cordilleran Flycatcher	Plaquemines	Louisiana	7 Dec 2019–4 Feb 2020	Photographs, spectrogram	S62208294
Pacific-slope/Cordilleran Flycatcher	Plaquemines	Louisiana	7–8 Mar 2020	Photographs	S65600714
Pacific-slope/Cordilleran Flycatcher	Dauphin Island	Alabama	25 Sep 2002	Photographs	S17853886
Pacific-slope/Cordilleran Flycatcher	Fort Morgan	Alabama	13 Oct 2003	Photographs	S17853893
Pacific-slope/Cordilleran Flycatcher	Clay	Florida	10–22 Mar 2020	Photographs, spectrogram	S65807406; Fig. 1
Pacific-slope/Cordilleran Flycatcher	Escambia	Florida	1 Oct 2015	Photographs	S37099326
Pacific-slope/Cordilleran Flycatcher	Leon	Florida	8 Jan 2015	Photograph	S21258088
Pacific-slope/Cordilleran Flycatcher	Pinellas	Florida	1 Oct 2004	Photographs	S30606243
Pacific-slope Flycatcher	Northampton	Virginia	12–29 Nov 1993	Photographs	S25417189
Pacific-slope/Cordilleran Flycatcher	Chatham	North Carolina	15 Jan 2000	Photographs, spectrogram	S23267189

Table 1. (Continued) Records (n = 37) of "Western Flycatchers" in eastern North America, which we define as the area eastward from the western boundaries of Ontario, Minnesota, Iowa, Missouri, Arkansas, and Louisiana. We include only records verifiable from published evidence (photographs, specimens, or spectrograms of vocalizations). Individuals were identified as Cordilleran Flycatcher (n = 2) or Pacific-slope Flycatcher (n = 13) or were either not identified to species or were identified solely from photographic or spectrogram evidence (n = 22). We accepted all original identifications as published or as accepted by members of the relevant bird records committees or eBird reviewers. Records are listed geographically, from Iowa and Louisiana east to Florida, then north to Nova Scotia. In the evidence column, LSUMZ numbers refer to specimens in the collection of the Louisiana State University Museum of Natural Science. eBird checklists are listed in the Reference column as an eight-digit number preceded by S; to access an eBird checklist online, type into a browser ebird.org/checklist/ followed by the checklist number beginning with S.

Published identification	Location	State or Province	Date(s)	Evidence	Reference
Pacific-slope/Cordilleran Flycatcher	Caroline	Maryland	16 Nov 2015	Photographs	S25869676
Pacific-slope/Cordilleran Flycatcher	Whipple	Ohio	15 Dec 2015	Photograph	S26341120
Pacific-slope/Cordilleran Flycatcher	Cumberland	Pennsylvania	18–25 Nov 2012	Photographs	S12144004, S12145420
Pacific-slope Flycatcher	Berks	Pennsylvania	20 Dec 2015–5 Jan 2016	Photographs, audio	S26433348
Pacific-slope Flycatcher	Burlington	New Jersey	11 Nov–14 Dec 2019	Photographs, spectrogram	S61314369
Pacific-slope/Cordilleran Flycatcher	Cape May	New Jersey	20 Nov–7 Dec 2019	Photographs	S62122755
Pacific-slope Flycatcher	New York	New York	21–23 Nov 2015	Photographs, spectrogram, fecal sample	Goldberg and Mason (2017)
Pacific-slope/Cordilleran Flycatcher	New York	New York	8–10 Dec 2016	Photographs	S32922727
Pacific-slope Flycatcher	New Haven	Connecticut	19 Dec 2015	Photographs, fecal sample	Goldberg and Mason (2017)
Pacific-slope Flycatcher	Hampshire	Massachusetts	23 Oct–2 Dec 2019	Photographs	S61346142
Pacific-slope/Cordilleran Flycatcher	Plymouth	Massachusetts	10 Nov 2006	Photographs, measurements	Rines (2008)
Pacific-slope/Cordilleran Flycatcher	Charlotte	New Brunswick	10 Nov 2015	Photographs	S25934338
Pacific-slope/Cordilleran Flycatcher	Antigonish	Nova Scotia	20 Nov 2015	Photographs	S25925038

utter vocalizations of both species (Johnson 1994; Lowther et al. 2020a, b; C. Benesh in litt.; D. Sibley in litt.). Vocal differences between the two species are subtle and subject to individual and regional variation (McCallum 2005, Pieplow 2011). Additionally, "Western Flycatcher" vocalizations overall are "more similar than different" (Lowther et al. 2020a, b). "Western Flycatchers" in the hybrid zone in southwestern Canada have mixed DNA that is skewed toward Pacific-slope Flycatcher haplotypes (Rush et al. 2009).

In the absence of any DNA material having been collected from the Clay County "Western Flycatcher," we suggest that its identification to the species level cannot be made—this despite spectrograms (e.g., Fig. 2) that are consistent with Pacific-slope Flycatcher male position notes. We agree with David Sibley (in litt.), who stated that, "... Going by call note you can say that the Florida bird is a Pacific-slope Flycatcher or an intergrade, and definitely not from the core range of Cordilleran Flycatcher ..."

Although our search was not exhaustive and we probably overlooked some records, the 37 records of the "Western Flycatcher" complex in eastern North America (Table 1) reveal some interesting results. Only three records, two specimens and one audio record, were identified as Cordilleran Flycatchers, and these were all from Louisiana. Members of the Louisiana Bird Records Committee are currently reevaluating all specimens of the "Western Flycatcher" complex from that state using DNA analyses, and one of these specimens, originally identified as a Cordilleran Flycatcher, is likely to be accepted as a Pacific-slope Flycatcher (D. Dittmann in litt). Of the 13 Pacific-slope Flycatchers originally identified in the east, five were specimens from Louisiana, two others were identified from DNA extracted from fecal samples (Goldberg and Mason 2017), and six were photographic

Figure 2. Spectrogram of a male position note uttered by the "Western Flycatcher" at Mike Roess Gold Head Branch State Park, Clay County, Florida, on 14 March 2020. The note ranges from about 4.5 khz to nearly 7 khz. It appears on the spectrogram as a single, upslurred note with a distinct ladle-shape or kink in the center; male position notes uttered by Cordilleran Flycatchers appear on a spectrogram as two notes separated by a brief pause. Recorded by Bill Pranty using a Panasonic Lumix FZ80 digital camera. Spectrogram produced by Cornell Lab of Ornithology (Macaulay Library #ML 215522041). For the sake of clarity, extraneous sounds have been removed here; the unaltered spectrogram can be found at <ebird.org/checklist/S65807406>.

and/or audio records. We recommend that the seven "Western Flycatchers" in eastern North America that were identified to species solely from photographs and/or audio—purportedly one Cordilleran Flycatcher and six Pacific-slope Flycatchers—be reevaluated to determine whether or not species identification is warranted.

The temporal pattern of the 37 records in Table 1 is intriguing. With a few exceptions—mostly representing flycatchers that were collected shortly after their discoveries—"Western Flycatchers" in the east usually represent individuals that remained for several weeks; many appeared to be attempting to winter or successfully wintered (Table 1). We suspect that the Clay County flycatcher wintered at Mike Roess Gold Head Branch State Park and was discovered four or five months after its arrival. The first "Western Flycatcher" in the east occurred in April 1991, which represents the only presumed northbound migrant found thus far (Table 1). The first winter record (which we define as the period from 1 November through 31 March) occurred during the 1992–1993 season. Through the next 12 winter periods, no more than one "Western Flycatcher" each season was found in eastern North America. But during the winter of 2015–2016, nine individuals were found, in seven states and provinces, as far northeast as New Brunswick and Nova Scotia, Canada (Table 1). Similarly, the winter of 2019–2020 seemed to be another pulse season, with eight records from four states, as far east as New Jersey and Massachusetts.

Based solely on records accompanied by DNA evidence, nine of the 37 (25%) "Western Flycatchers" found in eastern North American have been identified to species: seven Pacific-slope Flycatchers and two Cordilleran Flycatchers (one of which has been reidentified as a Pacific-slope Flycatcher; D. Dittmann in litt.). Based on these data, it seems that Pacific-slope Flycatchers are more likely to be found in eastern North America, but that Cordilleran Flycatchers may stray at least as far east as Louisiana.

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FIRST WINTER RECORD IN FLORIDA OF THE BUFF-BREASTED SANDPIPER (*Calidris subruficollis*)

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Over the past 25 years, notes in *Florida Field Naturalist* have documented the first records of 14 species of Neotropical migrants found in Florida during winter (1 December–28/29 February; Pranty and Ponzo 2020). Here, we provide details for another Neotropical migrant discovered wintering in Florida: a Buff-breasted Sandpiper (*Calidris subruficollis*) in Palm Beach County, 20–21 January 2020.

Location.—The Everglades Agricultural Area (EAA) is an area of more than 285,000 ha[2] located between Lake Okeechobee and the Northern Everglades. The region was originally sawgrass (*Cladium jamaicense*) marsh that was converted to agriculture beginning in 1948. The EAA is characterized by flat, low-lying terrain composed of peat soils and criss-crossed by drainage canals. Sugarcane (*Saccharum* spp.) is the primary crop grown, with sod, rice, and winter vegetables also planted. Since the mid-1990s, much hectarage in the EAA has been purchased by public agencies to improve water quality and to restore habitats in the region. Stormwater Treatment Area 1W (STA 1W), comprising 4,450 ha in Palm Beach County, is one of the areas that is undergoing habitat restoration. It is bordered on the north, west, and south by existing agricultural lands, and on the east by Arthur R. Marshall Loxahatchee National Wildlife Refuge. The western portion of STA 1W is visible from a dike that parallels a road that connects with County Road 880. In January 2020, the western portion of STA 1W was composed of a mix of shallowly flooded and unflooded fields. Vegetation ranged from none in the recently flooded fields to reeds growing taller than 1.5 m in areas that had been flooded for a longer duration.

Discovery.—On 20 January 2020, more than a dozen birders, including the three authors, were searching for a Pacific Golden-Plover (*Pluvialis fulva*) that had been discovered by Richard Crossley four days earlier. More than 1,000 shorebirds were present, and we carefully scoped the flocks as they rested on exposed bars or foraged in shallow water. On an exposed bar, we discovered a Buff-breasted Sandpiper among more than 200 Black-bellied Plovers (*P. squatarola*). Several photographers, including Dan Scolaro, obtained diagnostic images (Fig. 1). Other birders, including Carl Edwards on the same day, and Alex Lamoreaux on 21 January 2020, saw the Buff-breasted Sandpiper, but it was not seen afterward.

Description and behavior.—The following description of the Buff-breasted Sandpiper in STA 1W is based on our observations over more than an hour on 20

Figure 1. Buff-breasted Sandpiper at Stormwater Treatment Area 1W, Everglades Agricultural Area, Palm Beach County, Florida, 20 January 2020. The color photograph shows the typical upright stance, a buffy body with whitish underparts, a pale face with a prominent black eye, and yellow legs and feet. This individual, which was observed the following day but not subsequently, provides the first record of the Buff-breasted Sandpiper in Florida during winter. Palm Beach County, Florida is more than 7,000 km from its typical wintering range. Photograph by Dan Scolaro.

January 2020, as it rested and foraged on exposed bars. The individual observed was a small sandpiper, larger than a Least Sandpiper (*Calidris minutilla*) but much smaller than a Black-bellied Plover, with both species in direct comparison. It was rather long-legged and walked in a semi-upright posture (Fig. 1). The upperparts were rich buff, with dark mantle feathers edged broadly in buff creating a scaly appearance. The small, dovelike head was characterized by a plain buffy face with large, conspicuous dark eyes surrounded by pale eyerings, and a short, thick, pale bill. The underparts from the chin to the breast were pale buff, shading to whitish through the undertail coverts. The legs and feet were yellow. When foraging, the Buff-breasted Sandpiper picked deliberately from bare ground or shallow water. It chased away at least one individual each of three species: Ruddy Turnstone (*Arenaria interpres*), Dunlin (*Calidris alpina*), and Least Sandpiper. We heard no vocalizations.

Status and distribution.—Buff-breasted Sandpipers breed in the High Arctic from western Chukota, Russia east across Alaska to Nunavut, Canada, and they winter in grasslands, including the pampas, from southern Brazil through Uruguay to northern Argentina (McCarty et al. 2017). Southward migration is more widespread than during spring, with many birds occurring along the Atlantic coast (McCarty et al. 2017). In Florida, Buff-breasted Sandpipers are a ". . . regular, rare to fairly common transient throughout, except very rare in the Keys . . ." with seasonal occurrences from late March through late May and from late July through late October (Greenlaw et al. 2014). Thus, the STA 1W Buff-breasted Sandpiper furnishes the first record (and report) in Florida during winter, and represents an extralimital wintering record of more than 7,000 km. Other winter records of Buff-breasted Sandpipers in the Northern Hemisphere exist: eBird contains photographic records from Texas (at four sites; e.g., Micallef 2013, Weeks 2014, Surya 2018, Ortego 2019), Hawaii (Summers 2007), Senegal (Bacuez 2016), and Hong Kong (Thomas 2016).

Acknowledgments

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Florida Field Naturalist 48(3):102–104, 2020.

INTRIGUING PLUMICOLES FROM THE COMMON YELLOWTHROAT (AVES: PASSERIFORMES) ON VACA KEY, FLORIDA

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The organisms that live on the outer surface of birds (ectofauna) can be divided into three broad categories: plumicoles inhabit the surface of feathers, dermicoles inhabit the skin, and syringicoles inhabit the inner calamus of feathers (Proctor 2003). Within the past decade, a number of new records of ectofauna from birds have been reported from Vaca Key, Monroe County (Hribar and Miller 2011; Hribar 2013a, 2013b, 2014, 2019). These mainly have been mites and lice, although a fly and a thrips have been reported. In all cases, specimens have been recovered after a dead bird had been washed in a weak detergent solution and the solution had been passed through filter paper to recover specimens (Hribar and Miller 2011). In May of 2020, two Common Yellowthroats (*Geothlypis trichas*) were found dead outside of a building in the City of Marathon on Vaca Key, Florida (24.729984, –81.039438). Apparent cause of death for both birds was collision with a window. A male was found on 1 May 2020 and a female was found on 3 May 2020 underneath the same window, both apparently having died early in the morning of the day they were found. I handled the specimens and collected ectofauna as previously described (Hribar and Miller 2011).

I recovered two species of mites from the birds. Both birds were hosts for large numbers of the feather mite *Amerodectes hribari* Mironov and Chandler; this mite has also been identified on Common Yellowthroats in Arkansas, Georgia, and Pennsylvania (Mironov and Chandler 2017, Matthews et al. 2018). I collected six nasal mites (Rhinonyssidae) from the female bird. I identified these to the generic level as a species in the genus *Ptilonyssus* and they appeared to be *P. sairae* Castro (Pence 1975, Knee and Proctor 2010). Mites of the genus *Ptilonyssus* are known mostly from passerines, although one species has been reported from Caprimulgiformes (Chuck-will's-widow [*Antrostomus carolinensis*]; George 1961, Pence 1973). *Ptilonyssus morofskyi* Hyland and *P. sairae* have been collected from yellowthroats; both species are geographically widespread and known from a number of hosts (Hyland 1962; Pence 1972, 1973, 1975; Pence and Castro 1976; Knee and Proctor 2010). *Ptilonyssus sairae* has been reported previously from yellowthroats in Florida (Pence and Castro 1976).

I found one barklouse (Insecta: Psocoptera) on the male. The specimen was a nymph and not identifiable further. Psocoptera are well-known as inhabitants of birds' nests and have been recovered from the plumage of birds (Dobroscky 1925, Hicks 1953, Mockford 1967). Gouveia et al. (2012) reported Psocoptera to be the most commonly collected nidicole (nest inhabitant) group in their study of birds' nests in Amazonian Brazil. Some Psocoptera use phoresy on birds and mammals as a dispersal method (New 1987). It is possible that this specimen was phoretic; it is also possible that it crawled onto the dead bird as it lay on the concrete.

I found one fairyfly (Insecta: Hymenoptera: Mymaridae) on the female. Mymaridae are parasitic Hymenoptera; they parasitize eggs of other insects. Some parasitic Hymenoptera are known for phoretic transport by other insects, usually the host species (Clausen 1976). Mymaridae are egg parasites of Psocoptera (Baz 2008), such as the barklouse found on the male. *Alaptus globosicornis* Girault occurs in the Florida Keys (Hribar 2020) and is an egg parasite of psocopterans in the family Liposcelididae (Triapitsyn 2017).

I collected one immature scale insect (Insecta: Coccoidea) from the male. Scale insects are plant parasites and may be of great agricultural importance. The crawler stage of scale insects is often transported phoretically by birds (Greathead 1977).

The recovery of most of the aforementioned arthropods from bird plumage is not remarkable, but collecting a fairyfly from bird plumage is. The recovery of a psocopteran from the feathers of a conspecific male may be coincidental, but it is tempting to think that the fairyfly may have been seeking an oviposition host (i.e., the barklouse). Another possibility is that the fairyfly was using the bird as a phoretic host for transport to a new nest, where there may be psocopterans to parasitize. Doutt and Yoshimoto (1970) collected Mymaridae from birds' nests on South Georgia Island, as did Gouveia et al. (2012) in Brazil. Although Root (1967) reported finding one fairyfly in one gnatcatcher's stomach, their small size (about 0.2 mm in length) would preclude them from being a regular prey item. There may not be any real connection between fairyflies and birds other than they sometimes occur in the same areas (Ladin et al. 2015). Common Yellowthroats are a widespread migratory species and may serve as phoretic hosts for other arthropods. Relationships between plumicoles and nidicoles may prove to be an interesting line of research.

Acknowledgments

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TWENTY-NINTH REPORT OF THE FLORIDA ORNITHOLOGICAL SOCIETY RECORDS COMMITTEE: 2018-2019

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Abstract.—The Records Committee of the Florida Ornithological Society met at the Florida Museum of Natural History on 17 August 2019. We reviewed 94 new reports; in addition, we reviewed one submission tabled at our previous meeting, reviewed five submissions unresolved from our previous meeting, and discussed but voted not to open a previously decided submission. Of the 100 total reports we reviewed at the meeting, 79 were documented by photographs or video (several of these also had audio documentation), 2 were documented solely by audio recordings, and 6 were documented by specimens deposited in museum collections. In addition, we voted whether two exotic species met criteria to be considered established. The other 11 were sight reports with varying amounts of written documentation. Of these 100 reports, 77 (77%) were accepted, 18 were not accepted (18%), two were tabled (2%), and three were unresolved (3%). The submissions included eight species that would have been new additions to the Official List of Florida bird species if accepted (Dark-billed Cuckoo, Yellow-legged Gull, Black-tailed Gull, Double-toothed Kite, Red-masked Parakeet, House Crow, European Robin, and Scaly-breasted Munia), and four of these were accepted: Dark-billed Cuckoo, Black-tailed Gull, Double-toothed Kite, and Scaly-breasted Munia. The Official State List surged to 529 species.

This twenty-ninth report of the Florida Ornithological Society Records Committee (FOSRC) summarizes decisions made by the committee for the submission year ending in July 2019. Committee activity and operations are guided by our "Rules and Procedures," available from the author. The FOSRC routinely evaluates reports of species on the FOSRC Review List (20 or fewer accepted records or reports over the previous ten years) and reports of species occurring for the first (known) time in the state. On occasion, when we receive a recommendation, we also consider whether an exotic species meets our criteria for establishment in Florida. Reference here to "the Committee" refers to FOSRC.

The FOSRC met at the Florida Museum of Natural History on 17 August 2019. We reviewed 94 new reports; in addition, one submission tabled at our previous meeting was reviewed, five submissions

unresolved from our previous meeting were reviewed, and a motion to open a previously decided submission failed. Documentation supporting the 100 total submissions included photographs and video (79 submissions, several of these also had audio documentation), audio recordings (2 submissions), and specimens deposited in museum collections (6 submissions). The other 11 submissions were sight reports with varying amounts of written documentation. In addition, we voted whether two exotic species met criteria to be considered established in the State. Of these 100 reports, 77 (77%) were accepted, 18 were not accepted (18%), two were tabled (2%), and three were unresolved (3%). Not surprisingly, the rate of acceptance was much lower for submissions that lacked supporting photographic, audio, or specimen evidence (54% accepted, 17% unresolved) than for those with such evidence (80.4% accepted, 14.9% not accepted, 4.6% unresolved or tabled). Part of this is attributable to misidentifications or poorly detailed reports submitted by beginning birders.

The submissions included eight species that would have been new additions to the Official List of Florida bird species, and we accepted four of these (Dark-billed Cuckoo, Black-tailed Gull, Double-toothed Kite, and Scaly-breasted Munia), bringing the State List to 529 species. We added the cuckoo, gull, and kite to the Review List. The votes for two other potentially new species for the State (House Crow and European Robin) were unresolved, and the vote for another species (Red-masked Parakeet)—to be added as an Established Exotic—was tabled. The other submission representing a potentially new addition to the Official State List (Yellow-legged Gull) was not accepted.

This report was prepared on behalf of all members of the FOSRC serving during the 2018–2019 reporting year. The members and their year of term expiration on the FOSRC are David Goodwin (2019), Andy Kratter (2020), Mark Berney (2021), Elliot Schunke (2022), Michelle Davis (2023), John Murphy (2024), and Michael Brothers (2025). See the FOS website (http://www.fosbirds.org/) for a list of the current members of the FOSRC and their addresses.

Committee News, Formats, and Terminology

Committee news.—During 2019, the FOSRC met once on 17 August at the Florida Museum of Natural History, Gainesville. Dave Goodwin reached the end of his term this year on the committee and cycled off. Mitchell Harris, of Cocoa, will replace him. The FOSRC website, completely overhauled in 2017, continues to function well. Although the Committee still does not receive submissions for some records or reports of Review List species that are posted to online sites (e.g., various Facebook pages) or to eBird, the percentage of those that are being submitted has increased this year (Kratter 2018b).

Formats and terminology.—We followed the current nomenclature and sequence that are used in the American Ornithological Society (formerly American Ornithologists' Union) check-list (AOU 1998) and its supplements through July 2019 (https://americanornithology.org/publications/north-and-middle-american-checklist/) in the species accounts. The lumping of Thayer's Gull (*Larus thayeri*) into Iceland Gull (*Larus glaucoides*) by the AOU (Chesser et al. 2017) resulted in the loss of one species from the Official List, but the subspecies remains on our Review List. Within accounts with more than one submission on a species, each report is introduced sequentially by catalog number. The initials following the catalog number refer to one or more contributors who supplied information to the committee on accepted reports (see list below). We employ the terminology for age of birds outlined by Kratter (2012). We normally do not review subspecies, but we have accepted submissions on distinctive, field-identifiable subspecies whose taxonomic rank may be reevaluated by the AOS in the future. Our use of the words "report" and "record" to describe occurrences of species in Florida follow Robertson and Woolfenden (1992), a distinction that has been followed by subsequent major reviews of the Florida avifauna, and by the Field Observation Committee of the FOS. Individual occurrences that are independently verifiable (specimen, diagnostic photograph, or an audio or video file) are characterized as "records," and if not verifiable as "reports." Accepted reports are special only in the sense that the non-verifiable documentation is deemed to be fully supportive of the identification and the circumstances do not warrant special consideration. In past practice, the Committee has accepted only records (i.e., with verifiable evidence) for addition of a species to the Florida List. After that initial hurdle has been met, reports are considered on the basis of their merits based on available physical evidence and circumstance (provenance not an issue). For each species, I provide a review of the status of the species in Florida chiefly based on FOSRC data or through the end of this reporting period (July 2019), as specified.

Abbreviations used here in the species accounts are AOS (American Ornithological Society), FLMNH (Florida Museum of Natural History, Gainesville), FOSRC (Florida Ornithological Society Records Committee), NP (National Park), NWR (National Wildlife Refuge), and SP (State Park).

Submitters (only accepted reports are individually listed with given abbreviations): Philip and Samantha Andescavage (PSA), Daphne Asphell (DA), Mark Berney (MBe), Lucas Bobay (LB), Jeff Bouton (JB), Michael Brothers (MBr), Will Chatfield-Taylor (WCT), Kevin Dailey (KDa), Fred Dietrich (FD), Kathy Doddridge (KDo),

Bob Duncan (BD), Lucy Duncan (LD), Roxanne Featherly (RF), Carmen Ferriero (CaF), Christopher Ferro, David Gabay (DGa), Ross Gallardy (RGa), Reinhard Geisler (RGe), David Goodwin (DGo), Marcello Gomes (MG), John Groskopf (JG), Adam Hull (AH), Melissa James (MJ), Brant Julius (BJ), Jeanne Kaufman (JK), Marcus Kelly (MK), Samuel Jefferson Kennard, Mark Kramer (MK), Andrew Kratter (AK), Sam Krah, Ron Leclancher, Tom Lee, Jeff Liechty (JL), Larry Manfredi (LaM), Lorne Malo, Bernard Master , Kyle Matera (KMa), Yolanda Mauriz, Kenny Miller (KMi), Joseph Montes de Oca (JMO), Yve Morrell (YM), John Murphy (JM), Margaret Griffis O'Brien (MGO), Jeff O'Connell (JO), Mike Ostrowski (MO), Bryce Pierce, Robin Potvin (RP), Victoria Rothman (VR), Mark and Holly Salvato (MHS), Eli Schaperow (ES), David Simpson (DS), Iliana and Stephen Stokes, Malcolm Mark Swan (MMS), Alta Tanner (AT), Chris Wall, Paul Waller (PW), Eary Warren (EW), Bryan White (BW), Audrey Whitlock (AW), Stefanie R. Whitson (SW), Dan and Shirley Wilkerson (DSW), Graham Williams (GW), Adam Zions (AZ).

Submissions Accepted

Common Merganser, *Mergus merganser*

2019-1417 (AZ). A female, originally found by Mitchell Harris, was photographed by Adam Zions at Jetty Park (Brevard County), though two were likely present during their 16 December to 30 January stay.

This is the 11th Common Merganser accepted by the FOSRC; all of these have been since 2009 and the tenth was an old undated specimen from Pasco County. Records have mostly come from the Gulf Coast (Santa Rosa, Okaloosa, Citrus, Pasco, Lee counties) and twice along the Atlantic coast (Duval and Volusia County). The increase of occurrence in Florida is in agreement with some regional increases in populations in North America (Pearce et al. 2015).

Red-necked Grebe, *Podiceps grisigena*

2019-1377 (KDa). Rachel MacNutt discovered this bird at Huguenot Memorial Park (Duval County) on 5 January 2019 and it was present until 13 April. The bird was widely seen and photographed (eBird lists). A video-recording was submitted by Kevin Dailey.

The FOSRC has now accepted eight submissions of Red-necked Grebe: a record from Santa Rosa County (#2001-437, December 2000, Bowman 2004), two records from Leon County (#2012-945, November 2012, Greenlaw 2015; #2013-962, January 2013, Greenlaw 2015), a record from Pasco County (#2017-1192, November 2016, Kratter 2018b), and sight reports from Santa Rosa County (#2001-442, January 2001, Bowman 2004), Escambia County (#2008-675, February 2008, Kratter 2010), and Volusia County (#2013-988, March 2013, Greenlaw 2015).

Inca Dove, *Columbina inca*

2019-1416 (BD). Bob Duncan heard this bird giving its distinctive "no hope" call on 29 May 2019 at Peake's in Gulf Breeze (Santa Rosa County). He was unable to

see the bird. He confirmed the identity immediately after by listening to calls on the xeno-canto website (https://www.xeno-canto.org/).

Inca Dove records are increasing in northern Florida since the first record in 2011 (Greenlaw et al. 2014); this is the eighth. In fact, the FOSRC has accepted two other Inca Dove records from this exact same location. Others have been accepted from Duval, Franklin, and Escambia counties.

Key West Quail-Dove, *Geotrygon chrysia*

2019-1349 (YM, KMi). On 16 October 2018, Eric Ray found and photographed this bird at the Lantana Nature Preserve (Palm Beach County), where it stayed until 18 October.

2019-1359 (AWK, MBe). On 27 October 2018, Mark Berney found and photographed this bird at Dr. Von D. Mizell-Eula Johnson SP (Broward County). It was present until 4 November, but Mark Berney found likely the same bird again on 10 April 2019 on a nearby part of the trail. It stayed there until 4 May 2019 and was seen and photographed by many observers.

2019-1397 (AH). On 1 April 2019, Adam Hull found and got identifiable photos of this species at the Ormond Beach Central Park (Volusia County). Many birders searched the area in the following days and weeks, but the bird was never relocated.

This Caribbean species was added to the Review List in 2016. A long-staying pair was accepted by the FOSRC in 2017 from Long Key SP (Monroe County; FOSRC # 2017-1230, Kratter 2018b). The only other occurrence listed on eBird in Florida between 2007 and 2017 was a well-documented bird at the Deering Estate (Miami-Dade County) from December 2014–January 2015. The species was likely fairly common in Audubon's time but was rare by the late 1800s (Howell 1932). There were a few Florida records in the 1960s and 1970s that have not been assessed by the FOSRC (Stevenson and Anderson 1994). The Volusia County record is much farther north than any previous record; the northernmost previous record was the Palm Beach County record above. Greenlaw et al. (2014) consider it a casual to very rare visitor to the south peninsula.

Dark-billed Cuckoo, *Coccyzus melacorhyphus*

2019-1384 (KMa, MG, AWK, RG, MBe). On 6 February, Kyle Matera and Marcello Gomes encountered and photographed this bird in scrubby vegetation at the multi-use West Delray Regional Park (Palm Beach County). The all-dark bill and creamy underparts did not match any known cuckoo in North America, and they posted the images on-line. In quick time, the identification was made, and word spread. It was seen by hundreds over the next three days, last seen 10 February. Kratter et al. (2019) detail the plumage, identification, and migratory behavior of this austral migrant species. This is the first record for Florida.

The Dark-billed Cuckoo is a South American species, with the southernmost populations being Austral migrants. They have occurred only rarely north of South America (eBird, AOU 1998), with records from Clipperton Island (13 August 1958), Grenada (26 March 1963), Panama (26 January 1980), Nicaragua (28 April 2017), and an individual recovered from a wildlife rehabilitation clinic in Texas. The latter bird was brought to the clinic on 7 February 1987, later died there, and then was donated to the Louisiana State University Museum of Natural Sciences and prepared as a skin specimen (LSUMZ 164956). The record was accepted by the Texas Bird Records Committee (Lockwood 1998) but was originally designated as "origin hypothetical" by the ABA-Checklist Committee because of the unclear circumstances of its discovery (Robbins et al. 2003). The Florida record, along with retroactively the Texas record, were accepted by the American Birding Association Checklist Committee (Pyle et al. 2019).

White-collared Swift, *Streptoprocne zonaris*

2019-1400 (JB, BJ). On 1 May 2019, Jeff Bouton and Brant Julius were birding at Manasota Key (Charlotte County), midway between Englewood Beach and Sarasota County. A nighthawk-like bird appeared and Jeff immediately identified it as a White-collared Swift when he saw it in his binoculars. The large size, stiff soaring flight, long slightly forked tail, and broad white collar across the breast were familiar to him because he had seen this species many times in the Neotropics. Jeff was also able to get Brant on the bird, who noted the same distinctions.

This is the third accepted occurrence of this largely Neotropical species in Florida. The previous two records are both specimens: the first, from Perdido Key (Escambia County) on 25 January 1981 is the Mexican subspecies *S. z. mexicana* (Greenlaw et al. 2014); the second, from Lauderdale Lakes (Broward County) on 15 September 1994 is of the Greater Antillean subspecies *S. z. pallidifrons* (FOSRC #1994-310; Semo and Booher 2002).

Antillean Palm-Swift, *Tachornis phoenicobia*

2019-1425 (DSW, RG, LM). On 15 July 2019, Dan and Shirley Wilkerson discovered a swift foraging over Grassy Key, just north of Marathon (Monroe County). They suspected something unusual because it was smaller than a Chimney Swift (*C. pelagica*), and had a long forked tail, whitish underparts, and a more erratic flight style. They were able to get photos of the bird with their phone. They identified it tentatively as an Antillean Palm-Swift, based on their field guides, and submitted it to eBird. The bird was quickly verified for Florida's and the ABA-area's second record. The bird was last verified on Grassy Key on 21 July.

The only previous record of Antillean Palm-Swift in Florida was two birds photographed in Key West during their stay 7 July–13 August 1972 (*American Birds* 26:851, 1972; Greenlaw et al. 2014). The species is resident in Cuba, Hispaniola, and Jamaica (AOU 1998). It is occasionally recorded in Puerto Rico (eBird).

Broad-tailed Hummingbird, *Selasphorus platycercus*

2019-1380 (FD). This second-year male was visiting hummingbird feeders in a private yard in January 2019, east of Tallahassee in Leon County. It was caught and banded by Fred Dietrich on 13 January.

This is the ninth record accepted by the FOSRC but the first since 2011. There is also a specimen record, not assessed by the FOSRC, from Wakulla County February 2000 (Greenlaw et al. 2014). Like this submission, all previous records have been winter birds in the Florida panhandle (Escambia, Okaloosa, Walton, and Wakulla counties).

Broad-billed Hummingbird, *Cynanthus latirostris*

2019-1337 (GW). Graham Williams photographed this stunning adult male on Glencoe Road in New Smyrna Beach (Volusia County) on 27 January. The homeowners told him the bird had been present for one or two weeks. It stayed until 6 February.

This is the ninth accepted Florida record, all since 2004. Singles previously appeared in Escambia County (#2004-549, September 2004, Bowman 2006), Duval County (#2008-663, January 2008, Kratter 2008), Calhoun County (#2008-660, January 2008, Kratter 2008), Seminole County (#2011-841, January–February 2011, Greenlaw 2014), Franklin County (#2011-864, September 2011, Greenlaw 2014), twice in Leon Co. (#2013-949, January–February 2013, Greenlaw 2015; #2018-1303, January–February 2018, Kratter 2019), and Collier County (#2016-1166, February 2016, Kratter 2018a).

Hudsonian Godwit, *Limosa haemastica*

2019-1348 (KD, DG). On 8 October 2018, Kathy Doddridge found and photographed this bird at the east end of the Palma Sola Causeway in Manatee County. It was seen by many during its stay until 21 October. This is likely the same bird seen 9–10 October on Ana Maria Island, also in Manatee County (eBird: https://ebird.org/checklist/S49087738).

2019-1344 (LM). Larry Manfredi found this adult on 13 September 2017 on SR 9336 at about SW 230th Avenue in Miami-Dade County.

This species was added to the Review List in 2016. One record was accepted in 2017 (2017-1246, May 2017, Wakulla County, Kratter 2018b) and one in 2018 (2018-1322, April 2018, Franklin Co., Kratter 2019). In the ten-year period up to this meeting (2008-2018), eBird lists ten occurrences, six records (St. Johns County in June 2016, and five from Wakulla County), and four sight reports (September 2011 and August 2012 in Palm Beach County, September 2010 in St. Johns County, and August 2011 in Duval County). Greenlaw et al. (2014) list it as a very rare to uncommon transient. From recent records (1–2 per year at best) it seems better categorized as "very rare to rare."

Long-tailed Jaeger, *Stercorarius longicaudus*

2019-1340 (JE, RN). Jim Eager and Phyllis Mansfield found and photographed this pale morph juvenile on 30 August at Walton Rocks Beach (St. Lucie County). It was present through 3 September.

2019-1345 (SW). Stefanie R. Whitson photographed this dark morph juvenile on 17 September 2018 at Jetty Park in Cocoa (Brevard County). It was found 14 September by Phil Pickering (eBird: https://ebird.org/checklist/S48651555).

2019-1358 (AWK). This intermediate morph juvenile was found beached in Daytona Beach (Volusia County) on 9 September 2018. It was brought to the Marine Science Center where it died. The specimen was prepared as a complete skeleton at the FLMNH (UF 52813).

This species was added to the Review List in 2016. One record was accepted in 2016 (Kratter 2018a), four records were accepted in 2017 (Kratter 2018b), and one record was accepted in 2018 (Kratter 2019). Many recent unsubmitted reports and a few records are listed on eBird. Because of identification difficulties, we prefer to maintain it on the Review List. Greenlaw et al. (2014) listed it as a very rare to rare transient and apparent winter visitor.

Razorbill, *Alca torda*

2019-1427. On 6 January 2019, this bird was picked up live at New Smyrna Beach (Volusia County) and brought to the Marine Science Center. It later died and was donated to the FLMNH, where a study skin was prepared (UF53007).

For most of the past ten years, Florida has averaged about one Razorbill record per year (FOSRC records). Most of these have been birds that have washed up on beaches and were brought to wildlife rehabilitation hospitals on the north Atlantic Coast south to Brevard County. However, the winter of 2012–2013 saw a huge influx likely involving thousands of these alcids, with many birds reaching the Gulf Coast, all the way north west to Pensacola, with one bird making it to Louisiana (Diamond et al. 2020).

Thick-billed Murre, *Uria lomvia*

2019-1386 (ES). This bird was photographed by Eli Schaperow on the north side of Sebastian Inlet SP (Brevard County) on 22 January 2019 and not seen again.

The FOSRC has previously accepted six records of Thick-billed Murre, four specimens and two photographed. Including this record, all are from the winter (16 November to 11 January) on the Atlantic coast between Duval County and Palm Beach County.

Sabine's Gull, *Xema sabini*

2019-1338 (MO). This second-cycle or adult was seen and photographed flying off of Siesta Key on 11 August 2018 by Mike Ostrowski.

2019-1357 (JL). This adult was found by Jeff Liechty on 24 October 2018 on the beach at Indian Shores (Pinellas County).

2019-1367 (JO). This first-cycle was found by Jeff O'Connell on the beach at Siesta Key on 24 November 2018. Possibly the same bird was photographed nearby on 19 September (https://ebird.org/checklist/S59919700).

This species was added to the Review List in 2016. Two records and two sight reports were accepted in 2017 (Kratter 2018b), and one record was accepted in 2018 (Kratter 2019). Greenlaw et al. (2014) considered it an irregular, rare fall and occasional spring visitor. It also appears to be an occasional winter visitor, as the Brevard/Indian River County in 2017 (Kratter 2018b) and two sight reports in January from Volusia County (eBird) indicate, and an occasional summer visitor (Kratter 2018b). A number of recent sight reports and a few records have not been submitted to the FOSRC.

Black-tailed Gull, *Larus crassirostris*

2019-1420 (MBr). This adult was discovered on 1 February 2019 by Michael Brothers, 0.25 miles south of Frank Rendon Park in Daytona Beach Shores. It was found in the late afternoon, when thousands of gulls loaf on the beach, prior to flying offshore at dusk to roost. Despite efforts by many over the ensuing weeks, the bird was never relocated. This is the first record for Florida.

For a gull, the identification is relatively straightforward (Howell and Dunn 2007). It was a medium-sized gull, larger than Ring-billed Gull (*L. delawarensis*) but smaller than Herring Gull (*L. argentatus*). It had a very dark back (darker than adjacent Laughing Gulls [*Leucophaeus atricilla*]), white underparts, prominent black sub-terminal band on tail (excluding all white outer rectrices) with white tail tip and whiter base to tail. The uppertail coverts were white. The head was white with a dark smudgy band around the nape and minor diffuse speckling. The iris was pale yellow and the orbital ring red. The bill was yellowish-green with a black subterminal ring, a red tip, and a red mark on lower mandible adjacent to the black band. The legs were greenish yellow. In flight, it showed black wing tips with no white mirrors, a broad white trailing edge to secondaries and inner primaries; the outer primaries had small white tips. The white tail had a broad black band and white terminal tips. This is largely an east-Asian species but has been recorded (eBird, AOU 1998) casually in North America along the Pacific Coast (south to Baja California) and accidentally in the interior (Texas, New Mexico, Iowa, Illinois, Great Lakes region) and East Coast (Newfoundland south to North Carolina).

California Gull, *Larus californicus*

2019-1422 (MBr). Michael Brothers found this first-cycle bird in the large gull concentrations that gather near Frank Rendon Park in Daytona Beach Shores (Volusia County) on 14 March 2019. It was not seen again.

The FOSRC has previously accepted 16 records of California Gull; eleven of these were from the large gull concentrations in Volusia County.

"Thayers" Iceland Gull, *Larus glaucoides thayeri*

2019-1388 (JG). John Groskopf found this first-cycle bird in the gull and tern concentrations on Siesta Key Beach on 4 December 2018; it stayed for three more days.

2019-1423 (MBr). Michael Brothers found this first-cycle bird in the large gull concentrations that gather near Frank Rendon Park in Daytona Beach Shores

(Volusia County) on 31 January 2019. It was present at least until 14 February, but a first-cycle photographed by Brothers on 4 April 2019 at Daytona Beach Shores was likely the same bird.

The FOSRC has accepted 15 previous submissions, all since 1985; nine of these were from the large gull concentrations in Volusia County. A 1983 specimen and photograph from 1977 have not been evaluated by the Committee (Greenlaw et al. 2014).

Black-legged Kittiwake, *Rissa tridactyla*

2019-1336 (AK). This first-cycle bird was found on a beach in Pensacola (Escambia County) on 2 May 2018. It was brought to Wildlife Sanctuary of Northwest Florida, where it died. The specimen was given to the FLMNH and a complete skeleton was prepared (UF 52706)

2019-1376. (MK). This first-cycle was found by Tom Smith on 24 November 2019 at the Lake Worth Pier (Palm Beach County) and photographed by Marcus Kelly on 30 December 2018.

2019-1378 (MK). This first-cycle, missing its entire tail, was found and photographed by Mark Kramer at Fort Jefferson in the Dry Tortugas NP on 12 December 2018.

This species was added to the Review List in 2016; two records were accepted in 2017 (Kratter 2018b) and one record was accepted in 2018 (Kratter 2019). In the ten-year period prior to this meeting, eBird lists 11 documented records (including above) and 14 sight reports. These 25 occurrences are along the Florida Peninsula on both the Gulf coast (three) and Atlantic coast (22). Greenlaw et al. (2014) considered it a rare migrant and winter resident. Although this species may occur frequently enough to be removed from the FOSRC Review List, many recent reports have not been submitted to the FOSRC.

"Cayenne" Sandwich Tern, *Thalasseus sanvichensis eurygnatha*

2018-1276. (MO). This tern was discovered 17 September 2017 at Siesta Key Public Beach by Mike Ostrowski. This beach has previously hosted a number of unusual terns, including accepted Elegant and Cayenne Terns. It was seen and photographed a number of times by other observers as well for the next several weeks (last on 24 November). "Cayenne" Tern is the subspecies of Sandwich Tern that breeds in the Caribbean and South America, and is split by some authorities (IOC). It has a mostly or wholly yellow bill. This individual had also been submitted to eBird as an Elegant Tern. The bird appears about the same size or slightly larger than adjacent Sandwich Terns, with a long dull greenish yellow bill, which is noticeably decurved. There is a bit of black in the nares and a small smudge of black along the lower mandible. The black from the somewhat shaggy rear crest continues forward around the eye. The vote in 2018 was unresolved. This year the submission was accepted, with one dissenting vote, which felt a hybrid origin could not be ruled out.

The FOSRC has previously accepted two records of Cayenne Tern, both from Sarasota County: August 2012 (#2012-912, Greenlaw 2016b) and October 2016 (#2016-1102, Kratter 2018a).

Elegant Tern, *Thalasseus elegans*

2019-1352 (MO). Mike Ostrowski found and photographed this basic plumaged bird on 26 September 2018 at Siesta Key Beach, where previous records of this species have been recorded.

2019-1424 (DS). On 6 July 2019, David Simpson was scanning through images of terns that he had taken earlier that day at North Lido Key (Sarasota County) and noticed an orange-billed tern with a narrow and long bill, and a shaggy crest.

With these two birds, FOSRC has now accepted 13 submissions of Elegant Terns in Florida; nine of these were in Sarasota County (2012–2019) and eleven

of these were clustered on the Gulf Coast between Pinellas and Lee counties; the exceptions were in the Florida Keys (2015-1071, April 2015 at Pigeon Key, Monroe County) and the panhandle (2018-1265, June 2017 at Santa Rosa Beach, Walton County). It is possible, even likely, that the same bird(s) may account for several Sarasota County records.

Red-billed Tropicbird, *Phaethon aethereus*

2019-1370. This bird was found alive at Cocoa Beach (Brevard County) but later died at the Florida Wildlife Hospital. It was misidentified by the clinic and donated to the FLMNH, were it was prepared as a complete skeleton (UF52677). Unfortunately, it was not photographed before preparation, but the perpetrator (D. W. Steadman), experienced in tropicbird identification, identified it as a Red-billed Tropicbird and his measurements are diagnostic (exposed culmen 55 mm; wing chord 303 mm). Eventually the skeletal specimen will be available to be examined, but it is still being processed.

The FOSRC has previously accepted 15 submissions of Red-billed Tropicbird, two from the Gulf coast of the panhandle and 13 from the Atlantic coast. Greenlaw et al. (2014) consider it a rare visitor off the Atlantic coast, and an occasional visitor off the Gulf coast.

Neotropic Cormorant, *Phalacrocorax brasiliansus*

2019-1421 (MBr). On 10 June 2019, Michael Brothers photographed this adult at the Ponce de Leon Inlet (Volusia County).

Although Neotropic Cormorants are now regularly breeding in Palm Beach County (Greenlaw et al. 2014, Kratter 2018a), records away from that area have been scarce. This is the first record for Volusia County.

Golden Eagle, *Aquila chrysaetos*

2019-1365 (DA). Daphne Asbell photographed this near adult on 21 November 2018 at the intersection of WPA Road and US 27 in Jefferson County.

Golden Eagles are rare winter visitors to Florida (Greenlaw et al. 2014), with most records in the Panhandle. This species was added to the Review List in 2016, but all five of the submissions since were sight reports that were not accepted, often because they did not eliminate immature Bald Eagle (*Haliaeetus leucocephalus*) from the identification (Kratter 2018b).

Double-toothed Kite, *Harpagus diodon*

2019-1347 (BH). On 15 October 2018, Bev and Al Hansen were birding on Three Bridge Road in Chassahowitzka Wildlife Management Area (Hernando County), when they spotted an odd raptor. They did not recognize it and took over 100 photographs. After posting on-line, it was identified as the first Florida record of Double-toothed Kite. Unfortunately, it was not relocated, despite an army of birders searching on the following days. Details are given in Hansen and Kratter (2019).

This widespread Neotropical raptor has been recorded once previously in the ABA-Area: a second-year bird photographed by David Hanson at Boy Scout Woods on High Island in Galveston County, Texas, on 4 May 2011. That record was accepted by the Texas Bird Records Committee of the Texas Ornithological Society (Carpenter 2012) and then added to the American Birding Association's Checklist (Pranty et al. 2012).

La Sagra's Flycatcher, *Myiarchus sagrae*

2019-1362 (MGO). On 13 November 2018 Margaret Griffis O'Brien found and photographed this bird at South Point Park in Miami Beach (Miami-Dade

County). It was present through 18 November, and seen and photographed by many birders.

2019-1407 (WCT). David Gabay found this bird on 24 April 2019 in Spanish River Park (Palm Beach County) and it was present until 4 May.

2019-1402 (AW). Audrey Whitlock found and audio recorded this bird on Hidden Lake Road in Everglades NP (Miami-Dade County). It was not relocated.

2019-1394 (MJ). Melissa James found and photographed this bird at A.D. Barnes Park in Miami (Miami-Dade County) on 24 February 2019. It stayed until 24 March and was seen and photographed by many.

This species, found in the Bahamas and on Cuba, was added to the Review List in 2016. Two records were accepted in 2017 (Kratter 2018b) and one in 2018 (Kratter 2019). Although this rate of occurrence is slightly higher than the criteria for removal from the Review List, as evidenced by the four accepted records this year, the Committee feels that it is important to keep vagrants from the West Indies, such as La Sagra's Flycatcher, on the Review List, especially because Florida is the only State where they are found in the ABA-Area. With one exception, all records are from Southeast Florida (the Keys north to Palm Beach County); the exception was one in Manatee County in April 2013 (Greenlaw et al. 2014).

SULPHUR-BELLIED FLYCATCHER, *Myiodynastes luteiventris*

2019-1360 (AK). On 13 October 2018, this after-hatch-year female was found injured in Coral Springs (Broward County) and brought to the South Florida Wildlife Center. It died there and was donated to the FLMNH, where a skin plus partial skeleton was prepared (#UF 52798).

This is the first specimen for Florida. The FOSRC has now accepted 18 submissions of this species. All were recorded between mid-September and mid-November. This highly migratory species breeds from the mountains of Arizona and New Mexico south through Mexico to northern Central America, and winters in southern Central and South America.

YELLOW-BELLIED FLYCATCHER, *Empidonax flaviventris*

2019-1369 (KMi, PW, KMa, MG). This *Empidonax* flycatcher was found by David Gabay at Spanish River Park in Boca Raton (Palm Beach County), on 29 November 2018. It was present until 7 December and was widely photographed and audio recorded.

2019-1387. This bird was found alive in Naples (Collier County) but later died at a bird rehabilitation hospital (the Conservancy of Southwest Florida). It was donated to the FLMNH and prepared as study skin + partial skeleton (UF 52937). It is a small *Empidonax*: yellowish tones overall, especially on underparts and throat. The wings are quite dark, and it has a distinct round eyering. The measurements are diagnostic for this species (see Pyle 1997): wing chord 66 mm; tail 54 mm; exposed culmen (from nares) 8.34 mm; longest p – longest secondary 13.92 mm; longest p – p6 6.82 mm; p6 – p10 4.21 mm.

This species was added to the Review List in 2016. Two submissions were accepted in 2017 (Kratter 2018a), and one was accepted in 2018 (Kratter 2018b). Over the past 10 years, eBird lists many occurrences for Florida, but fewer than 20 were documented, and even documented records can be quite difficult to identify (see below). In particular, identification of silent migrant birds can be treacherous, and bright fall Acadian Flycatchers (*E. virescens*) are often mistaken for Yellow-bellied Flycatchers. Greenlaw et al. (2014) listed it as a very rare to uncommon transient, but a recently accepted record (FOSRC #2017-1221) is from early March, much earlier than expected for a migrant, and may have been a wintering bird (Kratter 2018b).

Willow Flycatcher, *Empidonax traillii*

2019-1339 (LM). Larry Manfredi found, photographed, and audio recorded this flycatcher on 21 August 2013 in Annex area, south of Lucky Hammock (Miami-Dade County). It likely was present for over two months, as Graham Williams photographed and audio recorded one there on 20 October (eBird: https://ebird.org/checklist/S15463848).

2019-1341 (MR). On 27 August 2018, Meg Rousher audio recorded this flycatcher at Harn's Marsh in Lee County.

Willow and Alder (*E. alnorum*) Flycatchers present vexing identification problems. Silent birds are generally not identifiable, except some may be distinguished by measurements in the hand. Judging by the frequency of documented records on eBird and accepted records of the FOSRC, the Willow Flycatcher appears to be much less common than Alder Flycatcher in Florida. The FOSRC has accepted six previous submissions (one spring, one mid-June, four fall) since it began to solicit submissions of this species in 2008.

Say's Phoebe, *Sayornis saya*

2019-1383 (DB). On 31 January 2019, Dave Bowman found this bird on Larkin Road in Pasco County. It was seen and photographed by many birders during its long stay until at least 17 March.

2019-1391 (JM). On 5 October, John Murphy observed this bird at Bald Point SP (Franklin County). It was not relocated.

This species was removed from the Review List in 2013 (Greenlaw 2015). It was added back to the Review List in 2016 when criteria for the Review List were changed (Kratter 2018a). Through 2017 the Committee accepted a total of 19 submissions for this species in Florida. Fifteen of these were photographic records. The first record in Florida was a wintering bird that was discovered and photographed in Orange County, in November 1975 (Greenlaw et al. 2014).

Yellow-green Vireo, *Vireo flavoviridis*

2019-1410 (LM). On 7 June 2019, Larry Manfredi found, photographed, and audio recorded this well documented vireo at Dagny Johnson Key Largo Hammock Botanical SP on Key Largo (Monroe County). It was present to the joy of many birders until 30 July 2019.

2019-1414 (LD, BD). This bird visited a water feature at a yard in Gulf Breeze (Santa Rosa County) on 2 June 2019. It was seen well but not photographed. This is the second accepted record from this yard.

The FOSRC has now accepted 16 accepted submissions for Florida; there is also a specimen from May 1958 in Santa Rosa County. Five of the records are from the western Panhandle, three are from Pinellas County, one from Brevard County, and seven are from south Florida and the Keys (Palm Beach, Miami-Dade, and Monroe counties). All records are from May to November.

Violet-green Swallow, *Tachycineta thalassina*

2019-1364 (JO). On 22 October 2018, Jeff O'Connell found and photographed this swallow at Faulk Drive Landing on Lake Jackson (Leon County), flying with about 20 Tree Swallows (*T. bicolor*). His description and the photos show a small swallow, with a short tail, shortish wings, extensive white in the face, and patches of white on the sides of the rump. Brownish tones to the back and slight buff in the face likely indicate an immature.

This is the second record of Violet-green Swallow in Florida, which is a montane breeder in the American West. The first Florida record was found by Tom Johnson in Everglades NP (Monroe County) from 10–15 January 2014 (FOSRC #2014-1032; Greenlaw 2016a).

Northern Wheatear, *Oenanthe oenanthe*

2019-1373 (MMS). On 23 September 2017, Malcolm Mark Swan video-taped a bird a distance at the Okaloosa Holding Ponds (Okaloosa County). At the time he thought it might be a Mountain Bluebird (*S. currucoides*) but noticed that it had a buffy orange breast and wrote it off as an Eastern Bluebird (*S. sialis*). Several months later he reviewed the video recording and discovered that it was a Northern Wheatear. Though the images are distant and not sharp, they show the distinctive white supercilium, buffy breast, and short tail of a wheatear. It is unlikely that other similar wheatear species would occur in eastern North America, where *O. oenanthe* is regular.

This is the tenth submission of this largely Palearctic species accepted by the FOSRC; a specimen from 1955 from Collier County (Greenlaw et al. 2014) has not been assessed by the FOSRC. All are fall records (21 September–2 November).

Bicknell's Thrush, *Catharus bicknelli*

2019-1409 (KMa). Kyle Matera found, photographed, and audio-recorded this singing thrush on 18 May 2019 at Lantana Nature Preserve (Palm Beach County). The upward inflected terminal notes of the song differentiate this from the very similar Gray-cheeked Thrush (*C. minimus*).

The FOSRC previously accepted six submissions of the Bicknell's Thrush, three in the spring and three in the fall. The species was originally added to the Official List based on specimens analyzed by Woolfenden and Greenlaw (2005). All following accepted records were of birds that were banded and measured in Monroe (2), Miami-Dade (2), Okeechobee, and Martin counties. Thus, this is the first accepted record of a bird that was not captured and measured.

Red-legged Thrush, *Turdus plumbeus*

2019-1406 (WCT, MHS). On the morning of 25 April 2019, Henry Detwiler found and photographed a Red-legged Thrush at Lantana Nature Preserve. Word got out quickly and it was posted on various internet groups, and many observers were able to see Florida's second record later that day. Despite much searching, the bird was not relocated after 25 April.

2019-1419 (MBe). For those who missed the above bird, Frank Schena found another Red-legged Thrush two months later, on 26 June 2019, at South Pointe Park in Miami Beach (Miami-Dade County). This bird was more cooperative and stayed until 30 June, when it was likely killed by feral cats that frequent this park. Differences in wear in the remiges (worn outer primaries, inner secondaries growing in) indicate that it was a different individual than #2019-1406 (above), which had fresh remiges. The subspecies represented is the expected nominate form from the northern Bahamas. Other subspecies are also found on Cuba, the Cayman Islands, Hispaniola, Puerto Rico, and Dominica.

The only prior Florida record was found and photographed by Marcus Ponce at Maritime Hammock Sanctuary in Brevard County on 31 May 2010 (Anderson and Ponce 2010, FOSRC #2010-807, Kratter 2012).

Bahama Mockingbird, *Mimus gundlachii*

2019-1346 (LM). Larry Manfredi found and photographed this bird at Adam's Key in Biscayne NP (Miami-Dade County) on 13 August 2018.

2019-1354 (KMi). On 10 October, 2018. Kenny Miller found and photographed this bird at Spanish River Park in Boca Raton (Palm Beach County).

2019-1399 (BE). On 14 April 2019, Betsy Evans found and photographed this bird at Garden Key, Dry Tortugas NP (Monroe County).

2019-1408 (WCT). This bird, which stayed for one week, was found by David Essian at Lantana Nature Preserve on 20 April 2019. It was audio-recorded by

Will Chatfield-Taylor and observed and photographed by many birders, many of whom were chasing the Red-legged Thrush (see #2019-1406 above).

2019-1411 (MBe). On 11 May 2019, Mark Berney found and photographed this bird at Mizell-Johnson SP in Dania Beach (Broward County). He also photographed the bird the following day.

This species was added to the Review List in 2016. Two Bahama Mockingbird submissions were accepted in 2016 (Kratter 2018a), one was accepted in 2017 (Kratter 2018b), and five were accepted in 2018 (Kratter 2019). Although this rate of occurrence is higher than the criteria for removal from the Review List, as evidenced by the five accepted records both this year and last, the Committee feels that it is important to keep vagrants from the West Indies, such as Bahama Mockingbird, on the Review List, especially because Florida is the only State where they are found in the ABA-Area. Greenlaw et al. (2014) listed it as a nearly regular, very rare to rare visitor. Most records are from the southeastern coast and keys, but the species has been found as far north as Brevard County on the Atlantic coast, and Pinellas County on the Gulf of Mexico coast. The species is found in the Bahamas and scattered in the Great Antilles, usually on the immediate coast or on smaller islands peripheral to the main islands.

Scaly-breasted Munia, *Lonchura punctulata*

2019-1412 (LD). The Scaly-breasted Munia, formerly known as the Nutmeg Manakin, is an Indian and southeast Asian species that is a popular cage bird. It has established feral populations in California, Hawaii, and the Greater Antilles. Duncan and Duncan (2015) detailed the arrival, breeding, expansion, and persistence of the Scaly-breasted Munia in the Pensacola area of northwest Florida.

Since the first observations in 2001, it has expanded west to Mississippi and east to Navarre (Santa Rosa County). Breeding has been widely documented (Duncan and Duncan 2015, FLMNH specimens). Duncan and Duncan (2015) showed that the population meets the FOSRC criteria as an Established Exotic.

Sprague's Pipit, *Anthus spraguei*

2019-1392 (JM). John Murphy photographed this species on 15 December at the Apalachicola Airport (Franklin County), the only regular site where this species occurs in Florida.

This species was added to the Review List in 2016. It occurs annually at the Apalachicola Airport but very rarely away from this site. This is the first submission to the FOSRC, although eBird documents records at this site every winter since 2015 (and before). Sprague's Pipit is a short grass specialist of central North America, breeding from Alberta and Saskatchewan south to eastern Wyoming and western South Dakota, and wintering from eastern Arizona east to western Louisiana and south to northern Mexico (AOU 1998).

Lapland Longspur, *Calcarius lapponicus*

2019-1430 (KD, RG). This adult male in basic plumage was found by Kevin Dailey on 24 November 2018 at Huguenot Memorial Park and also seen the next day.

This is the first submission of this species since it was added to the Review List in 2016. Greenlaw et al. (2014) considered it an irregular very rare visitor to the panhandle and north Atlantic coasts, and casual farther south. Documented records on eBird since 2010 total six, with an additional two sight reports.

Snow Bunting, *Plectrophenax nivalis*

2019-1368 (KD). Kevin Dailey found and photographed this bunting at Huguenot Memorial Park on 25 November 2018.

This species was added to the Review List in 2016 with changes in the criteria for inclusion on the list (Kratter 2018a). One record (FOSRC #2017-1168, Kratter 2018b; Duval Co.) was accepted in 2018. From 2010–2019, eBird lists four other occurrences in Florida, three on the northeast Atlantic Coast (St Johns, Flagler, and a sight report from Brevard counties), and one record in the Panhandle (Bay County). Greenlaw et al. (2014) listed it as an irregular, rare, winter visitor to Florida.

Spotted Towhee, *Pipilo maculatus*

2019-1363 (PSA, MBe). On 14 November 2018, Philip and Samantha Andescavage found and photographed this towhee at Dr. Von D. Mizell-Eula Johnson SP (Broward County). The bird was in an environmentally sensitive location and was not widely broadcast but was audio-recorded and photographed during its stay until 25 November. It was relocated by Mark Berney on 20 January 2019 and stayed until 19 April. During the latter part of its stay, the location was posted and it was seen and photographed by many.

This is the fourth record for Florida of this montane bird of western North America. The first was a specimen of the migratory subspecies *P. m. arcticus*, collected 14 December 1967 in Franklin Co. (Stevenson and Anderson 1994). The second, also in Franklin County, was found at Alligator Point by John Murphy in March 2007 (FOSRC #2007-633, Kratter 2008). The third was found by Bob and Lucy Duncan in Gulf Breeze (Santa Rosa County) in January 2012 (FOSRC #2012-879, Greenlaw 2014).

Western Spindalis, *Spindalis zena*

2019-1385 (RGa, VR). On 11 February 2019, Ross Gallardy found this female at Crandon Park on Key Biscayne (Miami-Dade County). It stayed until 5 May and was observed and photographed by many birders.

This species, resident in the Bahamas and Cuba, was added to the Review List in 2016. One record was accepted by the FOSRC in 2016 (Kratter 2018a), three were accepted in 2017, although 15 or so were reported to eBird that year (Kratter 2018b), and one was accepted in 2018 (Kratter 2019). Greenlaw et al. (2014) listed it as a regular visitor, with one breeding record (summer 2009 in Miami-Dade County). All records are from southeast Florida (Indian River, Palm Beach, Broward, and Miami-Dade counties) and the Keys (Monroe County).

MacGillivray's Warbler, *Geothlypis tolmei*

2019-1353 (JMO). Joseph Montes de Oca found and photographed this bird on 2 October 2018 in Tropical Park in Miami (Miami-Dade County). It was also observed on the following day.

2019-1355 (KM, TS). On 28 September, Tulia Datena found and photographed this bird at the Busch Wildlife Sanctuary in Palm Beach (Palm Beach County). It was originally thought to be a Mourning Warbler (*G. philadelphia*), but the bird's dingy white throat and broad broken eye arcs are more in line with MacGillivray's (Pyle 1997). It was present the following day as well, analyses of audio-recordings and further photographs confirmed it as MacGillivray's Warbler.

The FOSRC has now accepted 12 submissions of MacGillivray's Warbler. All except one have been from south Florida (Lee, Collier, Palm Beach, Broward, Miami-Dade, and Monroe counties; the exception was in April 2008 in Pinellas County (FOSRC#2008-682, Kratter 2010). Greenlaw et al. (2014) considered it an irregular, very rare winter visitor.

Mourning Warbler, *Geothlypis philadelphia*

2019-1343 (LM). Larry Manfredi found, photographed, and video recorded this warbler on 24 September 2018 at Elliott Key, Biscayne NP (Miami-Dade County). It was also present the following day.

The FOSRC added this species to the Review List in 2016, but this is the first submission since. The species, however, is more frequently reported and eBird has 12 observations (two records and 10 sight reports) from 2010–2019. Greenlaw et al. (2014) considered it an almost regular, rare to very rare transient.

Kirtland's Warbler, *Setophaga kirtlandii*

2018-1311 (RP). This bird was observed on 7 May 2018 at Ocean Bay Riverside Park in St. Lucie County by Robin Potvin and Roy Netherton. Their descriptions included the gray head back, white eye arcs, yellow breast, white undertail, indistinct wingbars, and tail pumping behavior. The vote in 2018 was unresolved, with dissenters concerned with an anomalous character for Kirtland's, a distinct malar, and the lack of description of the tail. The vote to accept this year has one dissent, who voiced similar concerns.

2019-1429 (RGe). Reinhard Geisler found and photographed this bird on 10 October 2018 at Washington Oaks SP (Flagler County).

These records increase the total of accepted submission of Kirtland's Warbler to 16. A specimen from Palm Beach County in April 1896 (Greenlaw et al. 2014) has not been assessed by the Committee. Of these 17 verified or accepted occurrences, 12 are from the spring (19 April–10 May), four are from the fall (16, 20, and 24 October), and one is from winter in Miami-Dade in February (#2017-1216, Kratter 2018b). This species breeds in the upper Midwest (mainly Michigan) and winters mainly in the Bahamas.

"Audubon's" Yellow-rumped Warbler, *Setophaga coronata audubonii*

2019-1398 (EW). This adult male in alternate plumage was seen and photographed by many during its three-day stay at the Sanibel Lighthouse Beach Park (Lee County), 23–25 April 2019. Photographs show no indication of hybridization with the nominate "Myrtle" subspecies; the two forms freely interbreed in a narrow hybrid zone in western Canada.

The FOSRC has now accepted nine submissions of this distinctive subspecies group. Greenlaw et al. (2014) considered it to be an irregular, very rare transient or winter visitor.

Townsend's Warbler, *Setophaga townsendi*

2019-1342 (RF, JK). On 11 September 2018, Roxanne Featherly and Jeanne Kaufman found and photographed this bird at A. D. Barnes Park in Miami (Miami-Dade County). It stayed until 15 September and was widely seen and photographed.

This species, a medium distant migrant in western North America, was added to the Review List in 2016. One record was accepted in 2018 (FOSRC #2018-1301; Kratter 2019). Greenlaw et al. (2014) stated that it is irregular, very rare winter visitor.

Bananaquit, *Coereba flaveola*

2019-1356 (CaF, AK). On 2 November 2018, Carmen Ferriero found and photographed this bird at A. D. Barnes Park in Miami (Miami-Dade County). It was present until 10 November.

2019-1403 (AW). Audrey Whitlock observed this bird on 4 May 2019 at the Cape Florida Bill Baggs SP on Key Biscayne (Miami-Dade County). It was not relocated.

2019-1390 (LM). Larry Manfredi found and photographed this bird on 1 February 2019 at Boca Chita in Biscayne NP (Miami-Dade County).

2019-1374 (BW). On 20 December, Bryan White found and photographed this bird at Crocodile Lake NWR on Key Largo (Monroe County). It was not relocated.

This species was added to the Review List in 2016. Four records were accepted in 2017 (Kratter 2018b), although seven different Bananaquits reported in Florida that year (eBird), and one record was accepted in 2018 (Kratter 2018b). Greenlaw et al. (2014) listed it as an irregular casual to very rare winter visitor. The 2018 record (FOSRC #2018-1306, Kratter 2019) was from Cocoa Beach (Brevard County); all other Florida records have been from southeast Florida and the Keys.

Black-faced Grassquit, *Melanospiza bicolor*

2019-1428 (AK, LM). This male was found by Steve Collins on 21 July 2019 at Blue Hole in Big Pine Key (Monroe County). It was widely seen, photographed, and audio-recorded during its stay until 20 September.

2019-1395 (LB). On 4 March 2019 Patrick Finch found this adult male at Fort Zachary Taylor SP in Key West (Monroe County). It was photographed later that day by Lucas Bobay. Although escaped aviary birds are occasionally reported from this site, including other grassquit species, Black-faced Grassquits are not widely kept in captivity, and the bird showed no signs of captivity.

The FOSRC has accepted seven previous records, all from southeast Florida (one each from Broward and Palm Beach County, two from Monroe County, and three from Miami-Dade). There are also three older specimen records from Miami-Dade County (Greenlaw et al. 2014). It is considered a casual winter visitor by Greenlaw et al. (2014).

Submissions Not Accepted

Cackling Goose, *Branta hutchinsii*

2019-1393. This small white-cheeked goose was observed in flight following a large form of Canada Goose (*B. canadensis*) on 12 January 2019 at South Lake Conservation Area (Brevard County). The Committee felt that it would be impossible to notice distinctive features, particularly size and shape of bill and head, to differentiate Cackling from small forms of the Canada Goose in such an observation. The FOSRC has previously accepted five submissions of Cackling Goose.

Red-necked Grebe, *Podiceps grisigena*

2019-1372. This sleeping waterbird was photographed on 28 November 2018 at the Eldora State House at Canaveral National Seashore (Brevard County). Though it is difficult to see details, the Committee was unanimous in thinking this was a female Black Scoter (*Melanitta americana*).

California Gull, *Larus californicus*

2019-1381. This first-cycle gull was photographed at Huguenot Memorial Park (Duval County) on 7 November 2018. A western North America gull expert (Alvaro Jaramillo, in litt.) thought it was too far retarded in molt to be a California Gull. Also, the bill pattern, pale base with dark tip, was not as strongly defined as typical in first-cycle California Gull.

Yellow-legged Gull, *Larus michahellis*

2019-1366. This adult gull was photographed at the Central Disposal Facility in Cocoa (Brevard County) on 9 February 2018. Unfortunately, all of the images, none very close, are of the bird perched, so details of the wing pattern cannot

be seen well. Although this bird definitely has some characters that are good for Yellow-legged Gull, such as the yellow legs, short stout bill, tone of upperparts, and large size, the Committee felt that a first State record depends on unassailable evidence, and gull records in particular depend on open-wing images. This is the fifth Yellow-legged Gull submitted to the FOSRC, but none have been accepted. It is largely a southern European and Mediterranean species but has occurred several times in Newfoundland.

"Thayers" Iceland Gull, *Larus glaucoides thayeri*

2019-137. This large, first-cycle gull was photographed at Frank Rendon Park at Daytona Beach Shores (Volusia County) on 23 February 2018. The Committee felt that the open wing shot (from below) showed that the primaries were too dark for a typical Thayer's Gull, which have nearly white undersides of the primaries. The lack of an upperwing shot made it difficult to see if it had the primaries had dark outer webs and very pale inner webs creating the distinctive "venetian blind" effect.

Elegant Tern, *Thalasseus elegans*

2018-1319. This tern was photographed just north of the lighthouse at St. Marks NWR (Wakulla County) on 29 May 2018. The rather distant photo shows a perched tern, with a long slender orange bill, a shaggy rear crest, black reaching the eye, and a white forehead. It is much larger than the adjacent tern also perched on a piling, likely a Forster's Tern (*Sterna forsteri*). The vote in 2018 was unresolved, with dissenters concerned that the bill shape was difficult to discern at that distance, the black of the crest did not reach above the eye, and that the bird may be too large in comparison with the nearby *Sterna* tern. In 2019, all members of the Committee came to similar conclusions to the dissenting votes.

Razorbill, *Alca torda*

2019-1382. This black and white seabird was sighted in flight offshore during an ocean watch at Huguenot Memorial Park on 15 January 2019. Good numbers of Razorbills had been reported this winter in North Carolina (eBird). Although the Committee felt that the observer likely saw an alcid, the distance or brevity of view would not permit one to differentiate other species, such as Thick-billed Murre (*Uria lomvia*) or Dovekie (*Alle alle*).

Pacific Loon, *Gavia pacifica*

2018-1307. This northbound migrant was photographed at Siesta Key (Sarasota County) on 8 April 2018. The photographs are very distant and show a non-breeding loon in flight, dark above, and white below. The flanks are distinctly dark and contrast sharply with the white belly. Details of the neck and bill are difficult to assess, although the bill appears small. In one photograph the head and neck are straight; in the other, the head is slightly drooping. In 2018 the vote was unresolved, with some feeling that the flank pattern eliminated Red-throated Loon (*Gavia stellata*), while others thought that a certain identification could not be reached given the quality of the photographs. The vote this year was to not accept, with members feeling that flight posture suggested Red-throated Loon and the plumage details were suggestive but not conclusive for Pacific.

This species was added to the Review List in 2016 and one record was accepted at our 2017 meeting (#2017-1238, three in Escambia County in March-April 2017; Kratter 2018b). In the 10 years prior to that meeting

(2007-2017), eBird lists 18 or so occurrences for Florida; 11 of these were in Escambia County, the others were in Okaloosa (two), Franklin, Alachua (two), Levy, Brevard, and Martin. Only five of the eighteen were documented by photographs, the others were sight reports. Greenlaw et al. (2014) listed it as a very rare winter visitor.

"Harlan's" Red-tailed Hawk, *Buteo jamaicensis harlani*

2019-1418. This raptor was observed at Lake Proctor Wilderness Area (Seminole County) on 25 April 2019. Although the description matched the Harlan's race of Red-tailed Hawk, the Committee felt that the observation was too brief, and that late April is beyond the expected date for a Harlan's Hawk in Florida in April. "Harlan's" Hawk has only been definitely documented twice before in Florida (Greenlaw et al. 2014).

Ferruginous Hawk, *Buteo regalis*

2019-1396. This pale *Buteo* was observed a few times from 16–22 March 2019 on Amelia Island (Nassau County). Although the observer's brief description includes some relevant field marks including wing shape, the Committee felt that such a rare record needed to be better documented, especially because it was observed several times. The Committee also felt that it would be unusual for a Ferruginous Hawk, a bird of open deserts and short grasslands, to stay several days in tidal marsh. The FOSRC has accepted only two records, both from the mid-1980s: one from Lake County (#1984-059, December 1983–February 1984) and one from Calhoun County (#1986-093, March 1986). Greenlaw et al. (2014) mentioned that two reports were also "accepted" during this period. None of the 11 submissions since have been accepted by the FOSRC.

Ivory-billed Woodpecker, *Campephilus principalis*

2019-1401. This bird was seen on 27 April in Sumterville (Sumter County). The very brief description only mentioned a "butter colored bill." It is the Committee's opinion that the only acceptable submissions of this species would be those with verifiable evidence (e.g., identifiable photographs or video). The recent controversy over video recordings, audio recordings, and sightings in Arkansas (Sibley et al. 2006) and Florida (FOSRC #06-610, Kratter 2008) calls into question whether the species persisted into the twenty-first century.

Giant Kingbird, *Tyrannus cubensis*

2019-1426. This bird was photographed at Fort Jefferson in the Dry Tortugas (Monroe County) on 15 October 1989. The photographer did not notice what appears to be a very large bill until recently. However, the image is in low resolution and it is difficult to see exact dimensions of the bill. The crown appears to be gray and the mask darker, and the Committee felt that this was likely a Gray Kingbird (*T. dominicensis*). In addition, other birders there at the time (eBird) would likely have noticed if a Giant Kingbird was present. Giant Kingbird, a rare Cuban endemic, has never been documented from Florida.

Yellow-bellied Flycatcher, *Empidonax flaviventris*

2019-1350. This bird was photographed at Red Bug Slough in Sarasota County on 12 October 2018. Although bill size and eyering details are suggestive of Yellow-bellied Flycatcher, the images do not include details of the wing tips. Underpart colors are difficult to ascertain in shady understory.

2019-1351. This bird was photographed at Conservatory Park (Manatee County) 12–14 October 2019. In the images, the Committee felt that the primary extension

was too long for Yellow-bellied Flycatcher and the secondaries lacked the black edges basally, and that this was likely an Acadian Flycatcher (*Empidonax virescens*).

2019-1379. This bird was photographed and video-recorded at Deering Estate in Miami (Miami-Dade County) on 10 December 2019. The Committee felt the vocalizations were more suggestive of Acadian Flycatcher. Sonographs on eBird (since removed) also seemed to match Acadian.

Bahama Mockingbird, *Mimus gundlachii*

2019-1415. This bird was observed very briefly on the Embry-Riddle Campus in Daytona Beach (Volusia County) on 24 April 2019. It was seen poorly while perched and then flew past the observer in good light. Although some characters are good for Bahama Mockingbird (lack of large white wing patches, darker plumage), the Committee felt that the observation was too brief and the description lacked several key features (streaked underparts, tail pattern, eye color).

Hooded Oriole, *Icterus cucullatus*

2018-1326. This female oriole, present from 20 January to 9 February 2018 in Valrico (Hillsborough County) was photographed visiting feeders. The bird has a rather long bill and somewhat graduated tail, indicating that it could be a Hooded Oriole, instead of the much more expected Orchard Oriole (*I. cucullatus*). Both species were supported in posts to online discussions about its identity. In 2018, the Committee felt that it would be best to send the photographs to western birders who are more familiar with variation in Hooded Oriole. Responses from Ryan Terrill and Alvaro Jaramillo (in litt.) favored Orchard Oriole over Hooded Oriole, though neither was absolutely sure about the identification. Two records have been accepted previously in Florida, both from Santa Rosa County: a male October 2002 (#2002-494, Bowman 2006) and another male January 2011 (#2011-834, Kratter 2012).

Lazuli Bunting, *Passerina amoena*

2019-1389 (AT). On 16 October 2018, Alta Tanner photographed this female-plumaged bird at Guana River Wildlife Management Area (St. Johns County). The images show a rather warm buffy bunting, distinct but somewhat buffy wingbars, with the greater covert (lower) wingbar more distinct, a distinct dark malar streak, a whitish throat breast with indistinct streaking, and a buff suffusion to the flanks. The malar streak and breast streaking are Indigo Bunting (*P. cyanea*) features, although the warm buff colors indicate that this may be a hybrid Lazuli x Indigo (Lethaby 2015). The FOSRC has accepted 16 submissions of Lazuli Bunting. Most of these were adult males.

Submissions Unresolved or Tabled

Red-masked Parakeet, *Psitticara erythrogenys*

2019-1413. A manuscript submitted to the *Florida Field Naturalist* by Will Chatfield-Taylor (in press) describes the Florida population of this introduced parakeet, native to southeast Ecuador and northwest Peru. The manuscript presents evidence that this species may meet FOSRC criteria to be considered an Established Exotic. Approximately 17,000 to 30,000 individuals were imported into the United States between 1983 and 1985 (Traffic U.S.A. 1987, Best et al. 1995). Nesting began in the Miami area in the 1990s, although wild populations were reported back to 1986. Chatfield-Taylor and Epps (2020) showed that

the populations have been expanding dramatically: the Miami-Dade County populations expanded from 8 km^2 in 1997 to 53 km^2 by 2018, and a separate population in Ft. Lauderdale (Broward County) expanded from 5 km^2 to 41 km^2 between 2006 and 2018. At the time of out meeting, the paper had yet to be accepted for publication; thus, the Committee felt it was best to wait until it was reviewed and accepted for publication before voting on the matter, and the submission was tabled.

"Harlan's" Red-tailed Hawk, *Buteo jamaicensis harlani*

2019-1361. This dark raptor was photographed at the Tram Road Holding Ponds (Leon County) on 26 February 2016. This species is easily confused with dark morph Red-tailed Hawk from western races, and the images are quite cropped and not very sharp. The Committee felt that we should consult outside experts to assist with identification; as a result, the vote was tabled.

House Crow, *Corvus spelndens*

2018-1320. The House Crow is resident in the Indian Subcontinent and southeast Asia. Populations have become established at several seaports across the globe, almost certainly arising from birds that arrived by riding cargo ships from their native range. House Crows have been present south of Tampa Bay in Manatee County (six birds since 2009) and Sarasota County (up to four birds since at least 2001; Greenlaw et al. 2014). Beginning in late April 2018, a House Crown in Nokomis Beach (Sarasota County) paired with a Fish Crow and nested. This bird is possibly one of the same birds present since 2001. Like other House Crows away from their native range, these birds in Florida are thought to be or have derived from birds that rode ships to deep-water ports, such as Port of Manatee.

The identification of the birds has not been questioned. According to the bylaws of the FOSRC, the individual must represent a "natural appearance," which is defined as the reasonably plausible appearance of a species from its home range without the intentional intervention of man. A bird that passively rides a ship or other man-made conveyance shall be considered to have occurred naturally if it is not confined or restrained at all during its passage, and if its survival en route is not based upon significant human intervention such as continual provision of food and water actually consumed. Natural appearance need not (indeed, usually cannot) be proven; it need only be reasonably plausible based upon the biology of the species and any other known relevant factors including the circumstances of its appearance.

Thus, the bylaws allow species to be added to the Official List that may have been transported here by riding ships, under certain conditions. One of the main products brought to the Port of Manatee is tropical fruit (http://www.portmanatee.com/about-us/port-facts/) and it seems feasible that crows could easily survive on long ocean crossings on a ship laden with tropical fruit. The question is whether this access to fruit should be considered "continual provisioning" and whether the birds may have been "confined" in a hold or other compartment. For the second year, the FOSRC vote was unresolved. Three votes to accept considered that the definition of natural appearance had been met; four votes to not accept deemed that the appearance of House Crows in Florida was not natural because crows could not survive a long sea-crossing without provisioning.

No state or provincial Committee in the ABA area has added House Crows. They have not been considered by the ABA Checklist Committee. It should be noted that other records committees may have varying definitions of natural appearance and may or may not allow some degree of ship assistance.

European Robin, *Erithacus rubela*

2019-1404. This bird was photographed at Mizell-Johnson SP (Broward County) on 14 October 2018. The identification was not in question, and if accepted this would be the first record for Florida, and the second for the ABA Area (Pyle et al. 2019). The bird is of the expected migratory nominate race, which breeds in northern Europe. The park is in close proximity to the deep-water Port Everglades, however, and the Committee was concerned that the bird may have been ferried here on a cargo or passenger ship. The submitter analyzed shipping schedules, and no cruise ships originating in western Europe entered the port in the preceding days of the observation. The vote (5 accept, 2 not accept) was unresolved. The votes against accepting the record were concerned that a first State record should have less doubt regarding its origins.

The ABA-CLC recently accepted a record of European Robin from Pennsylvania in February and March 2015 as a wild vagrant (Pyle et al. 2018). On 5 December 2014, a European Robin was photographed on a cruise ship that had recently come to port in Miami (https://www.facebook.com/groups/49535001197/?post_id=10153250032381198). It was not submitted to the FOSRC for evaluation.

Western Spindalis, *Spindalis zena*

2019-1405. The male was photographed at a small nature preserve in West Palm Beach (Palm Beach County) on Fairchild Ave South of the Palm Beach Gardens Mall on 14 May 2019. Unfortunately, in the photo is bird is too indistinct to see field marks. The descriptions, though not at odds with the identification, are very basic ("yellow breast, striped black and white head, black and white wings, blunt black bill"), leaving out important information on the size of the bird, pattern of stripes on the face, and pattern on the wings. Three Committee members felt that the description was adequate, whereas three did not. The vote was unresolved, and the submission will be discussed again in 2020.

Petition to Reopen

Great White Pelican, *Pelecanus onocrotalus*

2016-1118. The Great White Pelican has not been previously recorded in Florida or the ABA Area. This bird appeared in a flock of American White Pelicans (*P. erythrorhynchos*) at Ding Darling NWR (Lee County) on 28 February–1 March 2016. It was seen by many and widely photographed. It apparently reappeared in February 2017 but was not submitted to the FOSRC. The 2016 photographs show the bird to be larger than the nearby American White Pelicans, with a pinkish cast to the plumage, large protruding forehead and eyes, and black extending to the innermost secondaries. The Committee agreed that the identification was correct, but the provenance of the bird was questioned. Populations of Great White Pelican breeding in southeastern Europe are moderate-length migrants to sub-Saharan Africa; African populations are nomadic (Elliott et al. 2017). Individuals of this species have occurred as vagrants several times to western Europe, many of which are likely wild birds (Jiguet et al. 2008). Given the migratory behavior, the history of vagrancy, the lack of any signs of captivity, and pelicans' great ability to fly long distances, the Committee felt that a wild origin was not out of the question. However, the bird is also widely kept in captivity. A search of zoos and collections in the United States revealed that none had a missing bird. Some Great White Pelicans may be kept in private collections and may not be banded or reported. They are also kept in zoos outside the United States (e.g., in several South American zoos) that were not contacted. Using occurrence records, Jiguet et

al. (2008) proposed some climatic and environmental conditions for which pelican species (Great White, Dalmatian [*Pelecanus crispus*], and Pink-backed Pelicans [*Pelecanus rufescens*]) are likely to turn up naturally as vagrants in western Europe. The submission was tabled in 2016.

In 2017, the Committee had the additional 2017 record to consider. This individual has appeared to have joined a group of American White Pelicans and is moving with them throughout the year. Given that it may be difficult to identify this bird when it is moving with American White Pelicans, it is not implausible that the bird could have been in the wild for several years or even a decade plus. This greatly increases the potential geographic and temporal windows for which the bird may have escaped from captivity. At the 2017 meeting, it was also noted that migrant Great White Pelicans in the Middle East use favored stops to rest and forage and break up their long journey to eastern Europe. Pelicans have high wing-loading and are dependent on thermals off terrestrial environments for long movements. Given these considerations, we felt the bird from Sanibel is just as likely an escape from captivity as a wild vagrant from natural populations and the submission was not accepted.

As a result of criticism from the birding community about our 2017 decision, a motion was made to reopen the submission. The Committee felt that no new information regarding this submission was available and the motion to reopen did not pass. In addition, the Committee became aware that there are no records of Great White Pelicans in the Macaronesian Islands (Cape Verde, Canaries, and Madeira, and Azores) in the eastern Atlantic, off southern Europe and northwest Africa. These islands would be on the projected path that Great White Pelicans would need to take to reach North America. The Committee felt that Great White Pelicans would have an established pattern of vagrancy to these islands if the far longer vagrancy to North America was to be expected.

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FIELD OBSERVATIONS

Winter Report: December–February 2019–2020.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Electronic submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December–February), spring (March–May), summer (June–July), and fall (August–November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers follow this report.

Sight-only observations are considered "reports," whereas only those observations supported by verifiable evidence (photographs, video or audio recordings, or specimens) are called "records." Species for which documentation is required by the FOC and by the FOS Records Committee (FOSRC; <fosbirds.org/official-florida-state-bird-list>) are marked here with an asterisk (*). A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations in this report are: AFB = Air Force Base, AFR = Air Force Range, EOS = end of season, m. obs. = many observers, NERR = National Estuarine Research Reserve, NP = National Park, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, SF = State Forest, SP = State Park, STA = Stormwater Treatment Area, STF = sewage treatment facility, WMA=Wildlife Management Area, and N, S, E, W etc., for compass directions. Bold-faced entries denote birds newly reported or verified in Florida, or record numbers. +Photographs or video- or audio-recordings archived by the FOC are identified by a plus (+).

Summary of the Winter Season

State review species noted in this report include American Black Duck, Vaux's Swift, Antillean Palm-Swift, Allen's Hummingbird, Pacific Golden-Plover, Ruff, Black-headed Gull, Heermann's Gull, Great Cormorant, Great White Pelican, Say's Phoebe, La Sagra's Flycatcher, Thick-billed Vireo, Sprague's Pipit, Black-faced Grassquit, Scott's Oriole, and a Hooded Oriole.

Species Accounts

Black-bellied Whistling-Duck: 240 at Rabon Road Pond (*Jefferson*) 6 Dec–1 Jan (M. Smith, A. Smith); 6,872 on Gainesville (*Alachua*) CBC 15 Dec (D. Segal, D. Rohan); 50 at Fellsmere Grade Recreation Area (*Brevard*) 28 Feb (D. Simpson).

Fulvous Whistling-Duck: Up to 4 at Sweetwater Wetlands Park (*Alachua*) throughout the season (R. Rowan, T. Hardin).

Greater White-fronted Goose: 2 at The Villages (*Sumter*) through 9 Feb (M. Pitcher).

Snow Goose: 4 at Saint Marks NWR (*Wakulla*) 5–14 Dec and 22 Jan (D. Morrow); 1 at The Villages 24–27 Jan (D. Richard).

Ross's Goose: 1 at Pace (*Santa Rosa*) 19–28 Jan (M. Lehmann, R. Jamieson); 1 at The Villages 24 Jan (J. Dinsmore).

Canada Goose: 1 at Flamingo, ENP (*Monroe*) 13 Dec–4 Jan (B. Showler).

Egyptian Goose: 1 at Gainesville throughout the season (J. Mays).

*American Black Duck: 12 at Saint Marks NWR 1 Dec–EOS (D. Morrow).

Cinnamon Teal: 1 at Lake Apopka Wildlife Drive (*Orange*) 15 Dec–Feb 29 (B. Taylor).

Canvasback: 1 at Lake Apopka Wildlife Drive 15 Dec (S. Mary); 1 at Summerfield (*Marion*) 19 Jan (J. Dinsmore); 4 at North Shore Lake Apopka (*Orange*) 2 Feb (J. Dinsmore).

Greater Scaup: 1 at Paradise Park (*Lake*) 25–31 Jan (J. Walker).
Common Eider: 1 at Jetty Park (*Brevard*) 14 Dec (M. Harris); 1 at Riverside Park Pavilion (*Volusia*) 24 Jan–8 Feb (J. Kendall).
Surf Scoter: 2 at Big Sabine (*Escambia*) 18 Dec (M. Brower, S. Coster); 2 at Huguenot Memorial Park (*Duval*) 21–22 Dec (+K. Dailey); 2 at Maynard May Park (*Volusia*) 25 Jan–1 Feb (A. Place).
White-winged Scoter: 1 at Tom Renick Park (*Volusia*) 9 Feb (S. Krah).
Black Scoter: 3 females at Pine Island (*Hernando*) 23 Dec (C. Yarrow, M. Yarrow); 27 at Fort Pickens (*Escambia*) 2 Jan (B. Duncan, L. Duncan).
Bufflehead: Up to 20 at Overstreet Road (*Orange*) 15 Dec (+B. Elbert); 1 at 6th Street, Apopka (*Orange*) 16 Dec (S. Mitcham).
Common Goldeneye: 1 at Wildwood (*Sumter*) 18–22 Jan (M. Pitcher); 1 at Crystal River 24 Jan (A. Dinu); 2 at The Villages 28 Jan (J. Dinsmore).
American Flamingo: 1 at Saint Marks NWR 1 Dec–EOS (D. Morrow).
Horned Grebe: 1 at Lake Apopka Wildlife Drive 24–31 Jan (+R. Merrigan).
Groove-billed Ani: 1 at Dixie Way (*Brevard*) 28 Jan (M. Harris).
*Vaux's Swift: 1 at Gainesville 8 Dec–EOS (A. Kratter).
*Antillean Palm-Swift: 1 at Sombrero Key Golf Course (*Monroe*) 1–31 Dec (m. obs.).
Ruby-throated Hummingbird: 1 at Tallahassee (*Leon*) 9 Jan and 17–19 Feb (H. Hooper, F. Dietrich).
Rufous Hummingbird: 2 at Inverness (*Citrus*) through 12 Feb (E. Smith); 1 at The Trails subdivision (*Seminole*) 15 Dec–17 Feb (+J. Judefind); 1 at Pensacola (*Escambia*) 28 Jan (B. McQueen); 1 at Tallahassee 28 Feb (T. Tanaka).
*Allen's Hummingbird: 1 at Tallahassee 10 Dec–15 Jan (G. Griffin, P. Griffin, F. Dietrich); 1 at Carrabelle Beach (*Franklin*) 28 Jan–2 Feb (J. Petit, B. Petit, F. Dietrich).
Gray-headed Swamphen: 2 at Sweetwater Wetlands Park throughout the season (J. Giraulo, F. Maunsell); 1 at Lake Apopka Wildlife Drive 15 Dec–29 Feb (J. Leavens).
Sandhill Crane: 4 at Okaloosa County STF 16 Dec (B. Duncan, L. Duncan).
Whooping Crane: 1 at Micanopy 15 Dec (S. Goodman).
Black-necked Stilt: 1 at Orlando Wetlands Park (*Orange*) 13–29 Feb (T. Wagenmaker).
American Avocet: Up to 8 at Brookridge STF through 16 Feb (D. Grimes), 1 at Fort Island Gulf Beach (*Citrus*) 22 Dec (E. Roche, P. Bazany).
American Golden-Plover: 1 at Wakulla Beach (*Wakulla*) 14 Dec (J. O'Connell, W. Baker, T. Engstrom); 6 at Okaloosa County STF (*Okaloosa*) 28–29 Feb (B. Purdy, S. Hobson).
*Pacific Golden-Plover: 1 at Atlantic Sugar Mill Road North (*Palm Beach*) 16–30 Jan (R. Crossley).
Long-billed Curlew: 1 at Vilano Boat Ramp (*St. Johns*) 15 Dec (*fide* K. Dailey); 2 at Cedar Key 24 Feb (D. Leary, P. Leary).
*Ruff: 1 at A1–FEB (*Palm Beach*) 1 Dec (C. Hignite); 1 at Brookridge STF 2 Jan–28 Mar (A. Zions, et al.); 1 at Sem-Chi Rice Mill (*Palm Beach*) 19 Jan (m. obs.).
Purple Sandpiper: 1 at Huguenot Memorial Park 21 Dec–EOS (+K. Dailey).
White-rumped Sandpiper: 6 at Ponce Inlet (*Volusia*) 6 Feb (M. Young).
Pectoral Sandpiper: 1 at Black Point Wildlife Drive (*Brevard*) 26 Feb (W. Loftus); 25 at Okaloosa County STF 28–29 Feb (Shannon Hobson).
Semipalmated Sandpiper: 2 at East Gator Creek (*Brevard*) 25 Feb (+J. Kendall).
American Woodcock: 1 at Gulf Breeze (*Santa Rosa*) 7 Jan (B. Duncan, L. Duncan); 1 at Wekiwa Springs SP (*Orange*) 12 Feb (L. Mathis).
Parasitic Jaeger: 1 at Alligator Point (*Franklin*) 21 Dec (J. Murphy).
*Black-headed Gull: 1 at Okaloosa County STF 26 Jan–18 Feb (M. Craggin, M. Swan, B. Purdy).
Franklin's Gull: 1 at Destin (*Okaloosa*) 29 Dec (M. Swan).
*Heermann's Gull: 1 immature at Lake Worth Beach Park (*Palm Beach*) 1 Dec–EOS (m. obs.).

Iceland Gull: 1 at Destin 6 Dec (W. Sharkey, B. Purdy, M. Swan); 1 at Okaloosa Island (*Okaloosa*) 28–31 Dec (B. Purdy, M. Swan); 1 at Frank Rendon Park (*Volusia*) 29 Jan–1 Feb (S. Krah).

Lesser Black-backed Gull: 1 at Santa Rosa Island (*Escambia*) 10 Dec (D. Horton); 1 at Walnut Hill (*Santa Rosa*) 23 Dec–1 Feb (J. Yuhasz, R. Jamieson); 1 at International Paper Wetlands (*Escambia*) 8 Jan (J. Callaway, B. Callaway, A. Harper); 1 at Pensacola 13 Feb (S. Duncan).

Glaucous Gull: 1 at Saint Joseph Peninsula SP (*Gulf*) 17 Jan (E. Thompson); 1 at Fort Pickens 6–7 Feb (D. Horton, B. Duncan, L. Duncan, A. Knothe).

Great Black-backed Gull: 1 at Cedar Island (*Taylor*) 5 Feb (J. Dinsmore).

Common Tern: 2 at Mashes Sand County Park (*Wakulla*) 16 Dec (J. Cavanagh, S. Parrish); 1 at Jetty Park 21 Feb (C. Ferro).

Royal Tern: 1 at Newton Park (*Orange*) 28 Jan–29 Feb (+M. Peczynski).

Sandwich Tern: 1 at Mashes Sand County Park 16 Dec (J. Cavanagh).

Red-throated Loon: 1 at Alligator Point 16 Dec (J. Murphy); 1 at Tom Renick Park 26 Jan (S. Krah).

Wood Stork: 2 at International Paper Wetlands 17 Jan (J. Callaway, B. Callaway).

Brown Booby: 1 at Jetty Park 11–29 Feb (P. Higginbothan).

Northern Gannet: 1 at Hernando Beach (*Hernando*) 30 Dec (S. Plew).

*Great Cormorant: 1 immature, Indian River Lagoon, Edgewater (*Volusia*) 12 Feb (M. Brothers).

*Great White Pelican: 1 at Black Point Wildlife Drive (*Brevard*) 23 Jan–24 Feb (+K. Fisher).

Least Bittern: 1 at International Paper Wetlands 8–17 Jan (J. Callaway, B. Callaway).

White-faced Ibis: 1 at Saint Marks NWR 1 Dec–EOS (D. Morrow).

Snail Kite: 104 at Paynes Prairie Preserve SP (*Alachua*) 15 Dec (J. Mays).

Bald Eagle: 10 at Cantonment (*Escambia*) 30 Jan (P. Doggrell).

Broad-winged Hawk: 1 at Pelican Island NWR (*Indian River*) 17 Dec–11 Feb (A. Hargis); 1 at Indian River Club (*Indian River*) 3 Feb (J. Wiggins); 1 at Merritt Island NWR 9 Feb (J. Armstrong).

Short-tailed Hawk: 1 at Lake Woodruff NWR (*Volusia*) 15 Dec (J. Jackson); 1 at Weekiwachee Preserve 27 Dec (N. Langwald); 2 north of Masaryktown (*Hernando*) 29 Dec (S. Plew); 1 at Brookridge STF 7 Jan (B. Pranty); 1 at Saint Sebastian River Preserve SP (*Brevard*) 25 Jan (+A. Lamoreaux); 1 at Homosassa Springs SP 15 Feb (P. Bazany, E. Roche).

Burrowing Owl: 1 at Melbourne International Airport (*Brevard*) 30 Jan–17 Feb (P. Mansfield).

Short-eared Owl: 1 at Saint George Island SP (*Franklin*) 2 Jan (C. Reiland-Smith, S. Shepherd).

Hairy Woodpecker: 1 at Apalachicola River Wildlife Environmental Area (*Franklin*) 5 Dec (J. Murphy); 1 at Loop Road (*Lake*) 17 Jan (G. Quigley); 1 at Micco Scrub Sanctuary (*Brevard*) 30 Jan–13 Feb (P. Mansfield); 1 at Saint Sebastian River Preserve SP 5–22 Feb (D. Simpson); 1 at Osprey Acres Park and Nature Center (*Indian River*) 22 Feb (A. Begazo).

Crested Caracara: 1 at Saint Marks NWR 12 Dec (D. Morrow).

Monk Parakeet: 2 at Alimacani Boat Ramp (*Duval*) 16–22 Dec (+K. Dailey).

Least Flycatcher: 1 at Paynes Prairie Preserve SP throughout the season (M. Manetz); 1 at Gainesville 15 Dec–30 Jan (J. Sulek); 1 at Hague 15 Feb (H. Jones, W. Zhou); 1 (calling) at C.S. Lee Park 19 Feb (S. Simmons).

*Say's Phoebe: 1 east of Brooksville 14–17 Dec (K. Wood).

Vermilion Flycatcher: 2 at Saint Marks NWR 1 Dec–EOS (D. Morrow); 1 at Lake Apopka Wildlife Drive 15 Dec–23 Feb (J. Leavens); 1 at Navarre (*Santa Rosa*) 26 Dec (T. Ficker).

Ash-throated Flycatcher: 2 at M&M Dairy (*Duval*) 1 Dec (+K. Dailey); 1 at San Felasco Hammock (*Alachua*) 11–23 Dec (J. Donsky, B. Shea); up to 2 at Paynes Prairie Preserve SP 15 Dec–24 Feb (J. Varol, B. Pirzer); 1 at Lake Apopka Wildlife Drive 15 Dec–27 Feb (J. Leavens); 1 at Okaloosa County STF 16 Dec–4 Jan (B. Duncan, L. Duncan, M. Swan, S. Hobson); 1 at Weekiwachee Preserve 23 Dec–6 Jan (D. Gagne); 1 east of Brooksville 6–12 Jan (J. Mann, S. Mann); 1 at Smyrna Dunes Park 28 Jan (+S. Jones).

Great Crested Flycatcher: 1 at Orlando Wetlands Park 25 Jan–29 Feb (S. Mary); 1 at Wekiwa Springs SP 15 Feb (+J. Saczawa).

Brown-crested Flycatcher: 1 at Paynes Prairie Preserve SP to 4 Feb (C. Poli, R. Rowan).

*La Sagra's Flycatcher: 1 at ENP - Royal Palm (*Miami-Dade*) 9 Dec–EOS (m. obs.); 1 at Frog Pond WMA – Lucky Hammock (*Miami-Dade*) 1 Jan–14 Feb (m. obs.); 1 at ENP – Gate 15 (Miami-Dade) 24 Feb (L. Manfredi).

Western Kingbird: 1 at Crescent Drive (*Brevard*) 12 Dec–29 Feb (+L. Pernaz-Giz); 1 at Okaloosa County STF 16 Dec (B. Duncan, L. Duncan); 1 at Crowbar (*Clay*) 19 Dec (+J. Graham); up to 4 at Dixie's Park 11–26 Feb (A. Whitlock); 1 at Barber Park (*Orange*) 26–29 Feb (+R. Sena); 2 at Big Lagoon SP (*Escambia*) 15 Jan (E. Blomberg).

Scissor-tailed Flycatcher: 1 at Pensacola 25 Dec (J. Pfeiffer); 1 at W Keene Road, Apopka (*Orange*) 29 Feb (S. Siers).

*Thick-billed Vireo: 1 at Long Key SP (*Monroe*) 18 Feb (D. Irons, J. Irons).

Bell's Vireo: 1 at Paynes Prairie Preserve SP to 28 Dec (J. Mays).

Yellow-throated Vireo: 1 at Garcon Point (*Santa Rosa*) 14 Dec (L. Duncan); 1 at N Indian River Drive (*Indian River*) 26 Jan (S. Turner); 1 at Turkey Creek Sanctuary (*Brevard*) 8–10 Feb (L. Pernaz-Giz).

Florida Scrub-Jay: 1 at *Clay* 31 Dec (+S. Raduns).

Horned Lark: 1 at Greenwood (*Jackson*) 3 Jan (T. Rodriguez); up to 8 at Cross City (*Dixie*) 3 Jan–8 Feb (A. Zions); 7 in rural *Madison* 20 Jan (S. Goodman, N. Frade).

Purple Martin: 1 at Gulf Breeze 10 Jan (B. Duncan).

Bank Swallow: 1 at Walnut Hill 7 Jan (A. Harper).

Barn Swallow: 1 at Sweetwater Wetlands Park 2 Feb (T. Guida); 1 at Navarre (*Santa Rosa*) 8 Feb (L. Kelly).

White-breasted Nuthatch: 1 at Wakulla Springs SP 22 Feb (D. Robbins, J. Murphy).

Brown Creeper: 1 at Elinor-Klapp Park (*Leon*) 9 Dec (D. Morrow).

Winter Wren: 7 at *Alachua* 3 Dec–EOS (M. Manetz, J. Mays).

Golden-crowned Kinglet: 1 at Live Oak Avenue (*Seminole*) 26 Jan (C. Brown).

Gray-cheeked Thrush: 1 at ENP – Flamingo (*Monroe*) 19 Dec (J. Horn).

Wood Thrush: 1 at Sweetwater Wetlands Park 15 Dec (S. Collins, K. O'Connor); 1 at Gainesville 27 Jan (A. Zions).

Common Myna: 1 at Lexington Square (*Indian River*) 31 Jan (V. Srocznski).

Scaly-breasted Munia: Up to 3 at Gainesville 15 Dec–EOS (R. Rowan, K. Cordasco).

*Sprague's Pipit: 2 at Apalachicola airport (*Franklin*) 1 Dec–EOS (J. Murphy).

Ovenbird: 1 at Miccosukee Land Co-op (*Leon*) 1–4 Feb (B. Phelan).

Worm-eating Warbler: 1 at Universal Resort (*Orange*) 12 Feb (I. Batterman).

Louisiana Waterthrush: 1 at Gainesville 15 Dec (D. Ewing, S. Ewing); 1 at San Felasco Hammock 24 Dec (D. Kirschke); 1 at Tallahassee 1 Feb–EOS (J. Cavanagh).

Northern Waterthrush: 17 at *Alachua* during the season (A. Kratter).

Blue-winged Warbler: 1 at Maritime Hammock Preserve (*Brevard*) 3 Dec (P. Mansfield).

Black-and-white Warbler: 1 at E Gulf Breeze 5 Jan (M. Brower).

Tennessee Warbler: 1 at Paynes Prairie Preserve SP 3 Jan (B. Ewing, S. Ewing); 1 at Orlando Wetlands Park 31 Jan (M. Piercey).

Nashville Warbler: 4 at *Alachua* 2 Dec–EOS (L. Davis, A. Gregg); 1 at Buck Lake Road (*Leon*) 9 Dec (M. Hill); 1 at Destin 31 Dec (M. Swan, S. Hobson); 1 at W Pensacola

5–16 Jan (T. Stanmore, K. Stanmore); 1 at Tallahassee 17 Feb–4 Mar (G. Griffin, P. Griffin); 1 at Pelham Road (*Orange*) 26 Feb (A. Mary).

American Redstart: 12 at *Alachua* during the season (H. Adams); 1 female at Lake Minoa Park (*Sumter*) 31 Dec (J. Thomton); 1 at W Pensacola 1–9 Jan (T. Stanmore, K. Stanmore); 1 at Seminole Ranch Conservation Trailhead 25 Jan (C. Newton); 1 female at Island Lake Lane (*Lake*) 26 Jan (D. Kirkpatrick); 1 at Hontoon Island SP (*Volusia*) 28 Feb (A. Hull).

Cape May Warbler: 1 female at 13th Avenue (*Indian River*) 3 Feb (T. Towles); 1 at Spring Oak Drive North Pond (*Brevard*) 20 Feb (+A. Fay); 1 at Paynes Prairie Preserve SP 22 Feb (C. Heckscher); 1 male at Orlando Wetlands Park 29 Feb (+J. Gammon).

Northern Parula: 1 at Homosassa Springs SP 15 Feb (P. Bazany, E. Roche).

Magnolia Warbler: 1 at Black Creek Park (*Clay*) 4 Dec and 2 Jan (+J. Graham); 1 at Ferndale Preserve (*Lake*) 17 Jan (G. Quigley); 1 at Mead Botanical Gardens (*Orange*) 25 Jan–1 Feb (L. Brown); 1 at Orlando Wetlands Park 31 Jan–29 Feb (M. Piercey); 1 at Saratoga Springs Resort (*Orange*) 11 Feb (J. Thomton).

Yellow Warbler: 1 at Lake Apopka Wildlife Drive 23 Jan–29 Feb (H. Dreyer); 1 at Orlando Wetlands Park 25–26 Jan (S. Thompson); 1 at C.S. Lee Park 26 Jan–Feb 23 (S. Mitcham); 1 at Black Point Wildlife Drive 17 Feb (R. Parks).

Chestnut-sided Warbler: 1 at Robin Hood Ave (*Brevard*) 25 Jan (C. Newton).

Black-throated Blue Warbler: 1 female at Crystal River 25 Jan (P. Bazany, E. Roche); 1 male at Harry P. Leu Gardens (*Orange*) 26 Jan–17 Feb (Z. Holmes); 1 female at Plymouth Street (*Orange*) 9 Feb (+E. Raynor).

Yellow-throated Warbler: 1 at Miccosukee Land Co-op 8 Dec–FOS (B. Phelan).

Prairie Warbler: 1 at Alligator Point 16 Dec–8 Feb (J. Murphy).

Black-throated Green Warbler: 3 at Gainesville throughout the season (S. Hofstetter, A. Zions, T. Hardin).

Wilson's Warbler: 1 at Paynes Prairie Preserve SP throughout the season (G. McDermott).

Yellow-breasted Chat: 1 at Orlando Wetlands Park 26 Jan–29 Feb (S. Thompson); 1 at Okaloosa County Veteran's Park (*Okaloosa*) 14–28 Feb (J. Ferrari, L. Endt).

*Black-faced Grassquit: 1 at John Pennekamp Coral Reef SP (*Monroe*) 11–12 Jan (B. White).

Clay-colored Sparrow: 1 at Brooksville 8 Dec–EOS (J. Mann, S. Mann).

Field Sparrow: 1 east of Brooksville 8 Dec–EOS (J. Mann, S. Mann).

Lark Sparrow: 1 at Fort Pickens 15–23 Jan (P. Doggrell, A. Wraithmell); 1 at Inlet Point (*Volusia*) 24 Jan– 2 Feb (+A. Hull); 1 at Rotary Park (*Brevard*) 26 Feb (P. Mansfield).

Henslow's Sparrow: 1 at Tate's Hell SF (*Franklin*) 11 Dec (J. Murphy); 1 at Pine Meadows CA (*Lake*) 23 Feb (G. Quigley).

Le Conte's Sparrow: Up to 3 at Sweetwater Wetlands Park 3 Dec–EOS (T. Hardin); 1 at Weekiwachee Preserve 23 Dec (D. Gagne, C. Fisher, B. Perry).

Fox Sparrow: Up to 3 at Gainesville 11 Dec–EOS (T. Hardin).

Lincoln's Sparrow: 1 at Black Creek Ravines Conservation Area (*Clay*) 21 Dec (+J. Graham); 1 at Julington-Durbin Preserve (*Duval*) 6 Jan (+M. Charest); 1 at P.E.A.R. Park (*Lake*) 26 Jan–25 Feb (J. Walker); 1 at C.S. Lee Park 16–18 Feb (+J. Leavens).

White-throated Sparrow: 1 at Brooksville 7 Dec–7 Jan (J. Mann, S. Mann).

Dark-eyed Junco: 1 at Tremayne Drive (*Lake*) 24 Feb (+K. Rigling).

Summer Tanager: 16 at *Alachua* during the season (L. Davis); 3 at Tallahassee 1 Dec–EOS (S. Phillips); 1 at Pensacola 21 Dec (C. Nash); 1 at E Gulf Breeze 27 Jan–9 Feb (M. Brower); 1 at Pensacola 27 Jan (P. McLeod).

Scarlet Tanager: 1 at Gainesville to 2 Dec (L. Davis).

Western Tanager: 1 at Tallahassee 1 Dec–EOS (W. Adolph); 1 at Gainesville 20 Dec–8 Feb (S. Palmer); 1 at Newberry 31 Dec–EOS (K. O'Connor); 1 at *Clay* residence 6 Jan

(+J. Graham); 1 at Gulf Breeze 10–17 Jan (D. Timmons); 1 at E Gulf Breeze 20 Jan (M. Brower); 1 at 20th Avenue (*Indian River*) 29–30 Jan (G. Mina).

Rose-breasted Grosbeak: 1 female at Lake Lotus Park (*Seminole*) 9–23 Feb (+A. Boyle); 1 at Pace 28 Feb (L. Kelly).

Blue Grosbeak: 1 at Newnans Lake 11–15 Dec (C. Cattau); 1 at Gainesville 29 Feb (H. Jones); 1 at MacFarland Avenue (*Brevard*) 29 Jan (K. Bartholomew).

Indigo Bunting: 10 at *Alachua* during the season (T. Hardin); 1 at M&M Dairy 1 Dec (K. Dailey); 1 at Destin (*Okaloosa*) 16 Dec (M. Swan, S. Hobson); 1 at MacFarland Avenue 29 Jan (K. Bartholomew).

Painted Bunting: 1 at Pensacola 14 Dec (P. McLeod, R. McLeod, K. Walsh, C. Brown, P. Brown); 1 at Pensacola 1 Feb (J. Lloyd).

Dickcissel: 1 at Apalachicola 31 Dec (J. Murphy); 1 at Milton (*Santa Rosa*) 3 Jan–19 Feb (M. Lehmann); 1 at C.S. Lee Park 31 Jan–23 Feb (+B. Taylor).

Bobolink: 1 at Everglades WMA (3A-north) (*Broward*) 4 Jan (M. Berney).

Yellow-headed Blackbird: 1 at C.S. Lee Park 15–22 Feb (+S. Mary).

Rusty Blackbird: Up to 114 in Alachua County during the season (T. Hardin, J. Mays); 1 at Loxahatchee NWR (*Palm Beach*) 2 Jan–17 Feb (m. obs.).

Shiny Cowbird: 2 at Walnut Hill 1 Jan (J. Yuhasz).

Bronzed Cowbird: 1 at Newton Park (*Orange*) 15 Dec–29 Feb (+M. Hill).

*Scott's Oriole: 1 at Tallahassee 20–22 Dec (G. Simmons); 1 at Tallahassee 17 Feb–EOS (M. Castaneda, J. Castaneda).

*Hooded Oriole: 1 at Weekiwachee Preserve 23–28 Dec (D. Gagne, C. Fisher).

Baltimore Oriole: 1 at Gulf Breeze 7 Jan (A. Harper, L. Duncan).

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EFFECT OF INSTALLING OSPREY (*Pandion haliaetus*) NESTING PLATFORMS ABOVE STADIUM LIGHTS ON OSPREY PRODUCTIVITY

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Abstract.— Ospreys (*Pandion haliaetus*) commonly nest on utility poles and stadium light fixtures, where there are increased risks of fire and electrocution. Nesting on utility poles also leads to human conflict by causing power outages and preventing regular maintenance. The objective of this study was to evaluate whether nesting platforms installed above existing Osprey nests on stadium lights would be used by Ospreys and whether the productivity at these platforms would be comparable to productivity at the same sites prior to platform installation. In the fall of 2017, nine nesting platforms were installed above existing Osprey nests on stadium lights at Eckerd College in St. Petersburg, Florida. We monitored these nine nests for two years prior to platform installation and for two years afterwards. After the platforms were installed, all nine Ospreys nested on the platforms and none attempted to nest on the stadium lights. The difference in the number of fledglings was not statistically significant. Nesting platforms appear to be an effective method for reducing human conflict with Ospreys without affecting productivity.

Key words: human conflict, nest relocation, Osprey, *Pandion haliaetus*

Ospreys (*Pandion haliaetus*) are adaptable, piscivorous raptors that serve as an important indicator of ecosystem health. Osprey productivity and population size both decreased because of bioaccumulation of the by-products of the insecticide dichlorodiphenyltrichloroethane (DDT; Hickey and Anderson 1968), but the ban of DDT allowed Osprey populations to rebound (Bierregaard et al. 2020). In 1981, less than 10 years after the ban of highly-persistent DDT, there were approximately 1,750 Ospreys in Florida, and this number rose to between 2,500 and 3,000 Ospreys in 1994 (Houghton and Rymon 1997). In Pinellas County,

Florida, there are now >100 pairs of Ospreys (Osprey Watch Database 2020). Much of their current success is likely due to their ability to nest on artificial structures such as cell phone towers, utility poles, and stadium light fixtures (Reese 1997, Henny et al. 2008). However, nesting on utility and stadium poles can put Ospreys at risk through fire and electrocution and put them in conflict with humans by causing power outages and problems with maintenance (Washburn 2014). Simply removing nests from poles is ineffective because Ospreys often quickly re-nest and permits are sometimes required to move nests (Bierregaard et al. 2020). Although the Osprey is not a listed species in Florida, it is protected by the federal Migratory Bird Treaty Act and a permit is needed to remove an active nest (FWC 2018). A more effective option is to provide Ospreys with an alternative nesting option such as a nesting platform placed in close proximity to or above the utility pole or stadium light (APLIC 2006, FWC 2018). Many artificial nest platforms have been built and subsequently occupied by Ospreys, but relatively few studies have quantified the effectiveness of installing nesting platforms in encouraging Ospreys to relocate nests from utility poles or stadium lights (Austin-Smith and Rhodenizer 1983, Kochert and Olendorff 1999).

For over ten years, Ospreys at Eckerd College in St. Petersburg, Florida nested behind the stadium lights in the metal boxes that were intended to support a person doing maintenance on the lights (Fig. 1). During the breeding season, it was not possible to service the lights and some of the nesting material covered the lights and reduced their brightness. At some nests, Ospreys incorporated the power lines from the pole to the lights into their nests, potentially increasing the chance of fire. For these reasons, we chose to install nine Osprey nesting platforms and were thus provided with a unique research opportunity.

We evaluated whether Ospreys would move their nests onto nesting platforms installed above existing Osprey nests on stadium lights and whether this movement would affect the number of young produced. We compared the number of well-grown young produced from the stadium light nests to those produced on the nesting platforms.

Methods

We conducted this research effort at Eckerd College in St. Petersburg, Florida. This suburban campus is located directly on the Gulf of Mexico at the mouth of Tampa Bay in Pinellas County. The nine nests analyzed in this study were all on 20-m stadium light fixtures surrounding baseball, softball, and soccer fields. The nests were within 0.5 km of the saltwater bay and a relatively large (2 ha) freshwater pond.

We visited nests weekly from September 2015 through August 2019. During each visit we recorded nest condition, presence of adults, presence of a female in incubation posture, and number of chicks. If we saw an adult Osprey in incubation posture for more than two visits, we considered the nest to be active and recorded the earlier date (Forys et al. 2016).

Figure 1. Osprey platform (3 m × 3 m) placed above stadium lights at Eckerd College, St. Petersburg, Florida. Nesting material seen in metal box next to light belongs to monk parakeets (*Myiopsitta monachus*). Photographed by Fairl Thomas.

We determined nest success by counting the number of well-grown young that we observed in the nest just prior to fledging (Steenhof and Newton 2007, hereafter called fledglings). We considered a nest to be successful if we saw at least one fledgling at the nest.

After the end of the 2017 breeding season, we installed nine 3 × 3-m Osprey platforms approximately 1 m directly above the stadium light fixtures (Fig. 1). We removed Osprey

nesting material from the metal boxes and placed some of it on the nesting platform. We did not place any deterrents on the metal boxes because there was concern they would impede maintenance of the lights.

To determine if the number of fledglings differed significantly during the breeding seasons when the Ospreys were nesting on the lights compared to the platforms, we compared the average number of fledglings the two years before the platforms were installed (2016, 2017) to the average number after the platforms were installed (2018, 2019). In addition, we compared nest success (determined by the presence of at least one fledgling) before and after platform installation. Because our sample size was very small (n = 9 nests), we used non-parametric Mann Whitney U-tests on pooled data for the two years before installation and the two years after using SPSS (IBM, Armonk, NY, USA).

Results

All nine nest sites were occupied by a pair of incubating Ospreys each breeding season. In 2016 four of the nine nests were successful, in 2017 there were three, in 2018 there were six, and in 2019 there were four. Success before and after the platform installation did not differ significantly (U-test: $z = -0.469$, $P = 0.639$). The average number of fledglings per pair was similar each year ranging from 0.56 to 0.78. Number of fledglings ranged from 0 to 3 per nest, with 3 young in a nest occurring only once in 2016 (Table 1). The number of young produced per pair was not significantly different among the 4 years of our study (Mann-Whitney U-test: $z = -0.137$, $P = 0.891$).

Discussion

All of the Osprey mating pairs relocated from the stadium lights to the nesting platforms, despite the lack of deterrents at the original nest sites. Although some males and females were seen in and near the

Table 1. Number of Osprey fledglings seen at the nine Eckerd College (St. Petersburg, FL) nests prior to platform installation (2016 and 2017) and after the installation (2018 and 2019).

	Before platforms		After platforms	
Nest	2016	2017	2018	2019
1	1	2	2	2
2	0	0	1	0
3	0	1	0	0
4	0	0	1	0
5	0	0	2	0
6	2	0	1	1
7	1	0	0	1
8	3	0	1	1
9	0	2	0	0
Average	0.78	0.56	0.89	0.56
SD	1.09	0.88	0.78	0.73

nests prior to January, incubation began January–March and chicks fledged between April and July. After the platforms were installed, Ospreys were occasionally seen perching on the metal boxes behind the stadium lights, but none attempted to nest in the location of the original nests. Although this is a small study involving only nine nests, it indicates that installing nesting platforms above stadium light poles can be an effective method of preventing Ospreys from nesting directly on the light post. This supports the recommendations made by the Avian Power Line Interaction Committee (APLIC 2006) and the Florida Fish and Wildlife Conservation Commission (FWC 2018) that suggest placing nest platforms as close as possible to existing nests.

Nest success and productivity was similar during the 4 years of the study, indicating that Ospreys do equally well on a variety of artificial substrates. These results are in agreement with the results of a larger study of Ospreys in Pinellas County that found Osprey platforms and other artificial substrates did not significantly differ in the number of offspring produced (Forys et al. 2016). Studies of Ospreys at other locations produced similar results; productivity was not significantly different between platforms and other artificial structures (Van Daele and Van Daele 1982, Austin-Smith and Rhodenizer 1983, Martin et al. 2005). This similarity in productivity is likely because although nesting platforms can reduce the risk of fires or electrocution, these occasions are generally uncommon and thus are unlikely to affect long-term productivity. The primary gain from creating Osprey platforms above the lights was the reduction in conflicts between humans and Ospreys.

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MORTALITY IN BIRDS FROM FLORIDA WILDLIFE REHABILITATION CLINICS

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Abstract.— We summarize what we could learn about the cause of death in preparing 1,928 scientific specimens of birds salvaged from wildlife rehabilitation clinics in Florida from 2015 to 2020. Most specimens came from 14 different clinics in one inland and 11 coastal counties, from Pensacola (Escambia County) to Key West (Monroe County). These specimens represent 285 species in 56 avian families. Although our sample is not an unbiased look at avian mortality in Florida, we note these trends: overall trauma was involved in 81.1% of the cases, malnourishment accounted or 12.75% of cases, and illnesses accounted for 6.2%; the last two categories were not mutually exclusive. Trauma was particularly lethal for species found in terrestrial ecosystems, accounting for >93% of the cases. For offshore species, malnourishment accounted for most (78%) of the cases. Sicknesses were most prevalent in near-shore species. When the cause of trauma was known, most injuries were the result of collisions with buildings or windows (29.7%), collisions with moving vehicles (26.1%), or attacks by cats (25.4%).

Key words: birds, collisions, Florida, malnourishment, mortality, trauma, wildlife rehabilitation.

Bird populations the world over are facing increasing threats as the landscapes they inhabit become more hazardous to their well-being, particularly in cities and suburbs with dense populations of people, feral animals, and associated infrastructure (Erickson et al. 2005; Loss et al. 2013, 2014ab; Rosenberg et al. 2019). One way that people try to mitigate these effects is through wildlife rehabilitation clinics (WRCs), where citizens bring in injured or sick birds they have found to receive care and rehabilitation, with the goal of healing the bird and releasing it back into the wild. Most of these WRCs are in heavily populated areas with abundant hazards such as windows, vehicles, power lines, and pet or feral cats.

Despite their best efforts, the staff at WRCs report that 40–70% of the birds they receive eventually succumb to their injuries or illnesses (Schenk and Souza 2014, Molina-López et al. 2017). For decades, the usual terminus for avian carcasses at WRCs was incineration, as required by law. In the late 1990s, the Ornithology Division of the Florida Museum of Natural History (FLMNH) began to network with WRCs in Florida to tap into this rich source of information on the state's birds. Substantial data accompany each WRC specimen that FLMNH

has retrieved and prepared, thereby supplementing the ever-growing body of observational data on Florida birdlife. By preparing data-rich museum specimens from the birds that die at WRCs, the FLMNH has generated scientific information on the state's birds and added value to the services already provided by the WRCs. Subsequent to reporting data on >550 WRC specimens (Kratter et al. 2002), we summarize what we have learned about avian mortality in Florida by preparing nearly 2,000 specimens salvaged from WRCs from 2015–2020.

Methods

Staff at FLMNH makes several trips per year to pick up specimens that have accumulated in the WCR freezers. Usually within a year, we prepare the specimens as round skins, skeletons, spread wings, or combinations thereof. We also save two tissue samples for cryo-storage, each sample typically consisting of breast muscle, heart, and liver, to be used in molecular research. We retain one tissue sample at FLMNH and deposit the other at the Louisiana State University Museum of Natural Science.

We provide the WRCs with FLMNH data slips that are to accompany each specimen when it is placed in a freezer after death. The data slips have fields for recording the date, locality, collector, and observations by the collector or WRC staff on the cause of injury or illness. The FLMNH data slips often are not filled out completely, and many do not include information about the cause of injury.

We derived data about the cause of mortality from some combination of three sources. First, as already mentioned, the original finder (collector) of the injured or sick bird may note information such as "struck by car," or "flew into window," or "caught by cat," or "could not stand up." Second, while examining the bird, the WRC staff evaluates the presence and extent of injuries or illness, noting more specific conditions such as "fractured left wing" or "fractured right leg." These data are kept in the patient's charts and entered into the WRC's computer database or a ledger. If the bird survives, the charts become increasingly filled with data on weight, health conditions, and prognoses. If the bird dies, WRC staff place the carcass in a plastic bag for freezer storage, and usually place a filled out FLMNH data slip in the bag with the bird.

The third source of mortality information is from FLMNH preparators during their dissections, which includes internal and external examinations that evaluate molt, feather wear, reproductive organs, fat levels, age, skull ossification, and any injuries or macroscopic signs of disease. We realize that it is difficult to assess disease in specimens that have been frozen for months or years, so our detection of disease likely underestimates the true extent of avian diseases in Florida's wild birds. Preparators write these data in specimen catalogs and later transcribe data into the curatorial software Specify (Specify Collections Consortium, Lawrence, KS, USA), the software used at FLMNH for its specimen database. Often, the preparators note internal injuries or pathologies that were not detectable in the whole specimen, especially evidence of head trauma, additional broken bones, emaciation, or infection.

Because threats vary widely depending on habitat characteristics (e.g., windows are not a threat for marine taxa), we classified the species by general ecosystem preference as follows: offshore marine (Procellariiformes, Alcidae, *Fregata, Phaethon, Stercorarius, Sula, Rissa, Phalaropus, Anous, Onychoprion, Sterna paradisaea*); nearshore marine (*Aythya, Bucephala, Somateria, Melanitta, Mergus, Gavia, Podiceps, Phalacrocorax, Morus, Thalasseus, Leucophaeus, Sternula, Rhynchops, Sterna dougallii, S. hirundo, Larus marinus, L. fuscus*), other waterbirds (other Anatidae, *Podilymbus, Anhinga*, Ardeidae, other Charadriiformes, Gruiformes), and terrestrial (all other species).

The specimen-based data in this paper do not represent all of the birds that died at the WRCs during the study period. A number of very common species are underrepresented simply because we do not have the staff time, freezer space, or volume of specimen cabinets to prepare and store them. Our necessary system of triage eliminated many if not most individuals of some species (Appendix 1). For the Sandhill Crane (*Grus canadensis*), Double-crested Cormorant (*Phalacrocorax auratus*), Brown Pelican (*Pelecanus occidentalis*), Black Vulture (*Coragyps atratus*), Turkey Vulture (*Cathartes aura*), and Barred Owl (*Strix varia*), all of which do succumb with some regularity at WRCs, we prepared no specimens at all during the study period. Certain other common species, which tend to be on the small side of medium-sized birds, are relatively easy for beginners to prepare. Because training students in avian anatomy is a major part of our mission at FLMNH, these species may be overrepresented in the sample relative to other common species (Appendix 1). In other words, a larger percentage of individuals of these species were prepared as specimens than of other common species. Two other species were overrepresented by specimens because of research interests, namely Cory's Shearwater (*Calonectris diomedea*; project on wing molt underway by AWK) and Eastern Bluebird (*Sialia sialis*; Steadman and Franklin 2017). Also overrepresented were species that are rare in Florida or in our collections, and thus represent higher-priority specimens.

RESULTS

Geographic and taxonomic coverage.—From January 2015 through March 2020, the Ornithology Division of the FLMNH catalogued and prepared 1,928 specimens from WRCs in Florida. We received five or more birds from 14 different clinics (Table 1), which spanned the geographical extent of Florida, from Pensacola to Key West. We received 928 specimens from South Florida (Lee, Collier, Palm Beach, Broward, Miami-Dade, and Monroe counties), whereas 481 specimens were from Central Florida (Volusia, Brevard, and Pinellas counties), and 519 specimens were from North Florida (Escambia, Santa Rosa, and Alachua counties).

The WRC specimens represent 284 species of 56 avian families (Appendix 1). Within this highly diverse sample, 15 species had 20 or more specimens, and 63 others had from 10 to 19 specimens. Because of our triage system (see Methods), these numbers do not reflect the actual numbers of deceased birds that we receive, which in themselves also do not represent the full range of avian mortality at the WRCs.

Of the 284 species and 1,928 total specimens, 165 were terrestrial species (1,269 total specimens), 22 were nearshore species (129 total specimens), 28 were offshore species (173 total specimens), and 69 were other waterbird species (357 total specimens; Fig. 1).

Reason for admittance.—For 1,923 of the specimens, reasons for admittance to WRCs were categorized as injuries (e.g., entrapment in human dwellings, swimming pools, fishing gear), presumed illness or pathologies, or malnourishment; for the other five specimens, one was confiscated from illegal captivity, and four were chicks out of the nest. Injured specimens made up the majority

Table 1. Sources of bird specimens salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020.

Clinic	Location	Number of specimens
North Florida		
Wildlife Sanctuary of Northwest Florida	Pensacola (Escambia, Santa Rosa counties)	484
Florida Wildlife Care	Gainesville (Alachua County)	18
University of Florida School of Veterinary Medicine	Gainesville (Alachua County)	17
Central Florida		
Marine Science Center	Ponce Inlet (Volusia County)	146
Florida Wildlife Hospital	Melbourne (Brevard County)	258
Suncoast Seabird Sanctuary	Indian Shores (Pinellas County)	76
Others		1
South Florida		
Care and Rehabilitation of Wildlife	Sanibel, Ft. Myers (Lee County)	116
Conservancy of Southwest Florida	Naples (Collier County)	219
Cynthia Rohkamm	Lighthouse Point (Palm Beach, Broward counties)	58
South Florida Wildlife Center	Ft. Lauderdale (Broward County)	286
Pelican Harbor Seabird Station	North Miami Beach (Miami-Dade County)	94
Florida Keys Wild Bird Center	Tavernier (Monroe County)	48
Marathon Wild Bird Center	Marathon (Monroe County)	81
Key West Wild Bird Center	Key West (Monroe County)	20
Others		6
Total		1,928

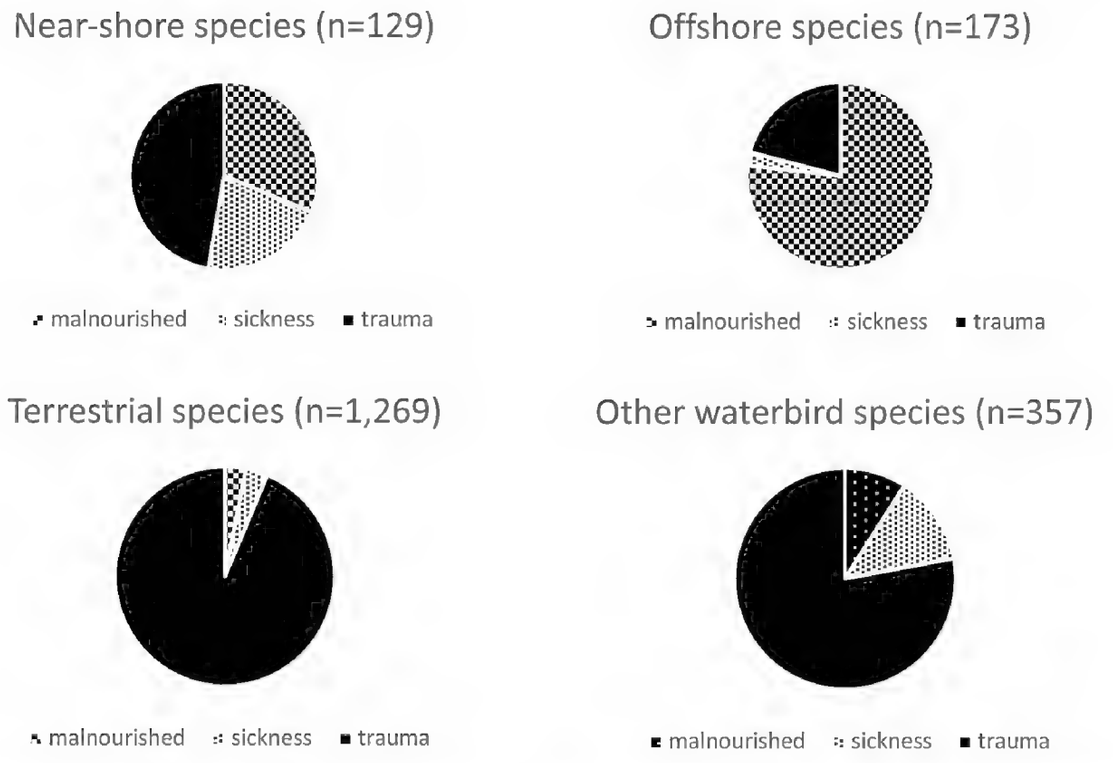

Figure 1. Reason for admittance of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, based on guild.

(1,560 or 81.1%), malnourished specimens accounted for 244 cases (12.7%), and illness accounted for only 119 cases (6.2%). Evidence of trauma was much higher for terrestrial species (93%) than for bird species associated with water (offshore marine 21%, nearshore marine 47.4%, other waterbirds 78.1%; Fig. 1). Illness was most pronounced in near-shore species (21.4%). Malnourishment was much higher in offshore species (76.7%) and especially rare in terrestrial species (3.1 %)

Agent of injury or illness.—The agent of injury was reported by the original finders for some of the birds and written on the FLMNH data slips by WRC staff, who sometimes added their own observations. Illnesses were reported by veterinarians or veterinary technicians at WRCs. Of the 1,928 specimens, the agent of injury or sickness was determined in 621 (36.0%; Table 2). Four agents each made up >15% of the cases (Table 2): beached seabirds (21.7%), collisions with buildings or windows (20.0%), collisions with moving vehicles (17.6%), and attacks by cats (17.1%). No other agent accounted for more than 5%. Of the 621 mortalities with assigned causes, 67.5% resulted from injuries due to interactions with the human landscape (e.g., windows, buildings, vehicles, pets). For the 418 cases restricted to injuries resulting from interactions with the human landscape, three agents were the cause of most injuries: collisions with buildings or windows (29.7%), collisions with moving vehicles (26.1%), and attacks by cats (25.4%).

Table 2. Agents of injury or illness for bird specimens salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020.

Agent of injury or sickness	n	%
Beached	135	21.7
Hit window or building	124	20.0
Car or other vehicle	109	17.6
Cat	106	17.1
Flew into something	27	4.3
Shot	19	3.1
Fungal or tumor	18	2.9
Red tide	16	2.6
Botulsim	15	2.4
Fishing gear	13	2.1
Dog	11	1.8
Other predator	9	1.4
Hurricane or tropical storm	9	1.4
Electrocuted	5	0.8
Bubblegum	1	0.2
Golf ball	1	0.2
Glue trap	1	0.2
Funnel trap	1	0.2
Motor oil	1	0.2
Total	621	

Types of injuries.—For the 1,536 cases with injury, 863 (56.2%) did not specify the injury. For the 673 cases where the type of injury was specified (Table 3), 767 specific injuries were recorded (some individuals had multiple injuries). Of these, 304 (40.0%) were wing injuries (dislocations or fractures of the shoulder, humerus, ulna, radius, carpometacarpus), 197 (25.7%) were head injuries (head trauma, injuries or fractures of skulls, eyes, or bills), 126 (16.4%) were leg or feet injuries (dislocations or fractures femur, tibiotarsus, tarsometatarsus, toes), and 140 (18.3%) were injuries to the torso (dislocations or fractures of coracoid, furcula, neck, trauma to internal organs, and various paralyses).

Types of illness.—Florida birds regularly undergo mortality events associated with algal blooms (red tides), and other diseases occur with frequency. For 69 cases, the illness was not specified. Of those specified (Table 4), aspergillosis fungal infections (18 cases), botulism (15 cases), and illness resulting from red tide events (16 cases) were listed.

Discussion

For Florida birds, co-occurring with humans is dangerous and often lethal. Wildlife rehabilitation clinics offer some hope for birds

Table 3. Types of injuries recorded for bird specimens salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020.

Type of injury	n	%
Not diagnosed	485	48.7
Head trauma	156	15.7
Wing	108	10.8
Ulna	25	2.5
Humerus	67	6.7
Carpal	15	1.5
Leg	47	4.7
Tibiotarsus	45	4.5
Tarsometatarsus	7	0.7
Spinal, paralysis, neck	45	4.5
Total	1,000	

that have become injured or sick. Among the birds that are admitted to WRCs, injuries from perils placed by humans in their environment (e.g., windows, vehicles, feral cats) are responsible for a majority of the cases, especially for non-marine species. Our results especially illustrate the grave effects for non-marine bird populations that result from collisions with windows and vehicles, and predation from free-ranging cats. These three phenomena have drastic effects on many bird populations in the United States, where mortality is estimated at 80–340 million birds/year from collisions with vehicles (Loss et al. 2014b), between 100 million and 1 billion birds/year from collisions with windows and buildings (Loss et al. 2014a), and 1.3–5 billion birds/year from predation by cats (Loss et al. 2013).

Rates of mortality for marine bird species are more difficult to determine. In our sample, marine species almost always were found alive on the beach but too weak to fly. These birds were emaciated, with

Table 4. Types of illnesses and other non-trauma related causes recorded for bird specimens salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020.

Illness	n	%
Red tide	16	6.0
Botulism	15	5.6
Fungal or tumor	18	6.8
Not given	24	9.0
Sick or injured	35	13.2
Beached	135	50.8
Beached and injured	14	5.3
Hurricane or tropical storm	9	3.4
Total	266	

reduced flight muscles and organ distress. About 9% of these also had traumatic injuries, though some of these injuries may have occurred subsequent to becoming weak. Major factors affecting marine bird populations off Florida are sea surface temperature anomalies and tropical weather. When sea surface temperatures spike, fish populations often plummet, and the bird populations dependent on this resource become malnourished (e.g., Piatt et al. 2020). If they cannot find better conditions, these birds become too weak to fly and many wash up on beaches and are taken to WRCs. Tropical storms and hurricanes have great potential to harm bird populations (e.g., Huang et al. 2017). Winds may blow seabirds landward, and some species may travel hundreds of kilometers inland (e.g., Marantz and Kratter 1998). Severe storms may also disrupt ecosystem functioning and have lasting effects on fish prey bases of marine birds. In October 2013, Hurricane Sandy was thought to have severely disrupted fish populations in the northeastern United States. In the subsequent winter of 2013-2014, thousands of Razorbills (*Alca torda*) flew hundreds to thousands of kilometers south of their usual wintering areas and underwent incredible mortality (Diamond et al. 2020).

At a WRC in eastern Tennessee (Schenk and Souza 2014), a higher percentage of fatal injuries to birds was sustained from cats (48.3% vs. 25.4% in our study) and dogs (14.3% vs. 2.6% in our study) than we found in Florida. They found a nearly equal percentage of injuries took place from collisions with motor vehicles (26.7% vs. 26.1 % in our study). Schenk and Souza (2014) did not assess collisions with buildings and windows, which suggests that they may not be a major contributor to bird injuries in that area. The clinic in their study is in a mid-sized town surrounded by rural areas, and injuries from collisions with buildings and windows may be minimal compared to the much more urban clinics from which we received a majority of Florida specimens. A rural setting may also increase the likelihood of lethal encounters with cats and dogs.

Molina-López et al. (2017) reported a different situation with WRCs in Spain, where most (41%) of the birds brought to WRCs were found in illegal captivity and confiscated by wildlife authorities. Although this is an issue with a few species in the United States, particularly Painted Buntings (*Passerina ciris*) in south Florida (Sykes et al. 2006), this problem is much more extensive in Spain, where finches in particular are trapped for singing competitions. In Spain, another large percentage of cases (33%) was orphaned young birds. In the sample of specimens for this study, we had only four cases of orphaned young birds. Because, they often make poor skin or skeletal specimens, we typically do not accept non-volant young of common species at the FLMNH, although these cases are common at the WRCs from which

we received specimens. Of the remaining cases in Spain, trauma accounted for 70% of cases, illness accounted for 15%, and misplaced birds found in human living spaces accounted for 15%. The percentage of cases involving illness was similar to ours, but they had somewhat fewer cases involving trauma.

As mentioned in the methods, the sample of specimens used in this study has some strong biases. First, the injuries or illnesses had to be lethal. It is the mission of the WRCs to rehabilitate and release the birds that arrive at their facilities. We do not know whether released birds have an elevated mortality rate compared to others of their species. Another bias is that many common species are underrepresented simply because we do not have the staff time to prepare them. Our necessary system of triage eliminated most individuals of common large species such as the Common Gallinule (*Gallinula galeata*), American Coot (*Fulica americana*), Common Loon (*Gavia immer*), American Anhinga (*Anhinga anhinga*), Great Blue Heron (*Ardea herodias*), Great Egret (*Arda alba*), Cattle Egret (*Bubulcus ibis*), Yellow-crowned Night-Heron (*Nyctanassa violacea*), Red-shouldered Hawk (*Buteo lineatus*), Red-tailed Hawk (*Buteo jamaicensis*), Barred Owl (*Strix varia*), and Great Horned Owl (*Bubo virginianus*). Even for some smaller species that are retrieved abundantly at WRCs (e.g., Red-bellied Woodpecker [*Melanerpes carolinus*], Blue Jay [*Cyanocitta cristata*], Gray Catbird [*Dumetella carolinensis*], Ovenbird [*Seiurus aurocapilla*], Common Yellowthroat [*Geothlypis trichas*], and American Redstart [*Setophaga ruticilla*]), we are unable to process all incoming specimens. Our study could be improved with substantial additional staffing to pick up birds more regularly and to dissect and analyze a larger proportion of them. Often particular species may be dedicated to other institutions or organizations. For instance, during the red tide outbreak of 2018–2019, biologists with the Florida Fish and Wildlife Commission collected dead birds from WRCs to screen for red tide poisoning. We are unaware of their findings.

Species probably vary considerably in their susceptibility to illness or injury that lands them in WRCs. Among passerines, some long-distance migrating species appear be particularly susceptible to injuries (e.g., the Neotropical migrants Common Yellowthroat, American Redstart, Black-throated Blue Warbler [*Setophaga caerulescens*], and Black-and-white Warbler [*Mniotilta varia*]) compared to species that seem to be just as common (e.g., the winter resident Yellow-rumped Warbler [*Setophaga coronata*], or the resident Tufted Titmouse [*Baeolophus bicolor*] or Carolina Chickadee [*Poecile carolinensis*]). Migrant species may be at greater risk of mortality because twice a year (during migrations) they are in completely unfamiliar environments and have not learned the

local landscape of predators and other dangers. Many residents and winter resident species, on the other hand, remain in the same area for months, which allows them time to learn the dangers in the landscape. Among waterbirds, shorebirds (Scolopacidae, Charadriidae), nearly all of which we prepare as specimens, appear less susceptible to injury than other taxa. These species live in environments with fewer hazards than terrestrial ecosystems (buildings, vehicles, free ranging cats). In addition, they are primarily found on beaches, marshes, and mudflats in Florida, which are mostly inaccessible for people, and mortality may be under-recorded simply because the injured or sick birds are not found and brought to WRCs. We hope that our research will provide a springboard for future studies of avian mortality that are more comprehensive in geographic coverage and more detailed in their necropsies.

Acknowledgments

We thank the staffs of every WRC for their cooperation, and for the considerable effort they extend, day in and day out, to save wildlife of all sorts, not just birds. We thank the many volunteers that us have helped us prepare specimens at the FLMNH over the course of this study. The Batchelor Foundation provided generous support to expand our work with WRCs in 2018. The Florida Fish and Wildlife Commission providing funding in 2002 that helped to establish our initial network with WRCs in Florida.

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Appendix 1. Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

English name	Scientific name	Number of specimens
Anseriformes		
Black-bellied Whistling-Duck	*Dendrocygna autumnalis*	3
Canada Goose	*Branta canadensis*	1
Wood Duck	*Aix sponsa*	3
Blue-winged Teal	*Spatula discors*	6
Northern Shoveler	*Spatula clypeata*	1
American Wigeon	*Mareca americana*	1
Mottled Duck	*Anas fulvigula*	1
Mottled Duck x Mallard	*Anas fulvigula x platyrhynchos*	4
Green-winged Teal	*Anas crecca*	2
Redhead	*Aythya americana*	4
Ring-necked Duck	*Aythya collaris*	1
Greater Scaup	*Aythya marila*	1
Lesser Scaup	*Aythya affinis*	3
Common Eider	*Somateria mollissima*	1
Surf Scoter	*Melanitta perspicillata*	2
White-winged Scoter	*Melanitta deglandi*	1
Black Scoter	*Melanitta americana*	3
Bufflehead	*Bucephala albeola*	4
Hooded Merganser	*Lophodytes cucullatus*	1
Masked Duck	*Nomonyx dominicus*	1
Ruddy Duck	*Oxyura jamaicensis*	3
Galliformes		
Northern Bobwhite	*Colinus virginianus*	1
Indian Peafowl	*Pavo cristatus*	1
Common Quail	*Coturnix coturnix*	1
Grebes		
Pied-billed Grebe	*Podilymbus podiceps*	4
Horned Grebe	*Podiceps auritus*	6
Pigeons, doves		
White-crowned Pigeon	*Patagioenas leucocephala*	7
Common Ground Dove	*Columbina passerina*	7
White-winged Dove	*Zenaida asiatica*	2
Mourning Dove*	*Zenaida macroura*	3
Cuckoos		
Smooth-billed Ani	*Crotophaga ani*	1
Yellow-billed Cuckoo	*Coccyzus americanus*	24
Mangrove Cuckoo	*Coccyzus minor*	1
Black-billed Cuckoo	*Coccyzus erythropthalmus*	3
Nightjars		
Common Nighthawk**	*Chordeiles minor*	18

Appendix 1. (Continued) Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

	English name	Scientific name	Number of specimens
	Antillean Nighthawk	*Chordeiles gundlachii*	1
	Chuck-wills-widow**	*Antrostomus carolinensis*	16
	Eastern Whip-poor-will	*Antrostomus vociferus*	7
Swifts			
	Chimney Swift	*Chaetura pelagica*	15
Hummingbirds			
	Ruby-throated Hummingbird	*Archilochus colubris*	13
Rails			
	King Rail	*Rallus elegans*	4
	Clapper Rail**	*Rallus crepitans*	21
	Virginia Rail**	*Rallus limicola*	18
	Sora**	*Porzana carolina*	16
	Common Gallinule	*Gallinula chloropus*	2
	American Coot*	*Fulica americana*	3
	Purple Gallinule**	*Porphyrio martinicus*	14
	Purple Swamphen	*Porphyrio porphyrio*	2
	Yellow Rail	*Coturnicops noveboracensis*	1
Limpkins			
	Limpkin	*Aramus guarauna*	8
Avocets, stilts			
	Black-necked Stilt	*Himantopus mexicanus*	3
	American Avocet	*Recurvirostra americana*	2
Oystercatchers			
	American Oystercatcher	*Haematopus palliatus*	3
Plovers			
	Black-bellied Plover	*Pluvialis squatarola*	5
	Killdeer	*Charadrius vociferus*	7
	Semipalmated Plover	*Charadrius semipalmatus*	3
	Piping Plover	*Charadrius melodus*	4
	Wilson's Plover	*Charadrius wilsonia*	1
	Snowy Plover	*Charadrius nivosus*	1
Sandpipers			
	Ruddy Turnstone	*Arenaria interpres*	16
	Red Knot	*Calidris canutus*	6
	Sanderling	*Calidris alba*	16
	Dunlin	*Calidris alpina*	5
	Least Sandpiper	*Calidris minutilla*	4
	Semipalmated Sandpiper	*Calidris pusilla*	1
	Short-billed Dowitcher	*Limnodromus griseus*	5

Appendix 1. (Continued) Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

	English name	Scientific name	Number of specimens
	American Woodcock	*Scolopax minor*	3
	Wilson's Snipe**	*Gallinago delicata*	11
	Spotted Sandpiper	*Actitis macularius*	2
	Solitary Sandpiper	*Tringa solitaria*	2
	Lesser Yellowlegs	*Tringa flavipes*	1
	Willet	*Tringa semipalmata*	5
	Red-necked Phalarope	*Phalaropus lobatus*	10
	Red Phalarope	*Phalaropus fulicarius*	10
Jaegers			
	Pomarine Jaeger	*Stercorarius pomarinus*	4
	Parasitic Jaeger	*Stercorarius parasiticus*	4
	Long-tailed Jaeger	*Stercorarius longicaudus*	3
Alcids			
	Thick-billed Murre	*Uria lomvia*	1
	Razorbill	*Alca torda*	4
Gulls and terns			
	Black-legged Kittiwake	*Rissa tridactyla*	2
	Bonaparte's Gull	*Chroicocephalus philadelphia*	10
	Laughing Gull**	*Leucophaeus atricilla*	20
	Ring-billed Gull	*Larus delawarensis*	1
	Herring Gull	*Larus argentatus*	11
	Lesser Black-backed Gull	*Larus fuscus*	7
	Great Black-backed Gull	*Larus marinus*	6
	Brown Noddy	*Anous stolidus*	10
	Sooty Tern	*Onychoprion fuscatus*	23
	Bridled Tern	*Onychoprion anaethetus*	17
	Least Tern	*Sternula antillarum*	15
	Gull-billed Tern	*Gelochelidon nilotica*	1
	Caspian Tern	*Hydroprogne caspia*	1
	Black Tern	*Chlidonias niger*	2
	Roseate Tern	*Sterna dougallii*	3
	Common Tern	*Sterna hirundo*	19
	Arctic Tern	*Sterna paradisaea*	1
	Royal Tern	*Thalasseus maximus*	3
	Sandwich Tern**	*Thalasseus sandvicensis*	15
	Black Skimmer	*Rynchops niger*	7
Tropicbirds			
	White-tailed Tropicbird	*Phaethon lepturus*	7
	Red-billed Tropicbird	*Phaethon aethereus*	1
Loons			
	Red-throated Loon	*Gavia stellata*	3

Appendix 1. (Continued) Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

English name	Scientific name	Number of specimens
Common Loon*	*Gavia immer*	2
Storm petrels		
Leach's Storm-Petrel	*Hydrobates leucorhous*	4
Band-rumped Storm-Petrel	*Hydrobates castro*	2
Shearwaters		
Northern Fulmar	*Fulmarus glacialis*	2
Black-capped Petrel	*Pterodroma hasitata*	1
Cory's Shearwater**	*Calonectris diomedea*	18
Sooty Shearwater	*Ardenna grisea*	3
Great Shearwater	*Ardenna gravis*	9
Manx Shearwater	*Puffinus puffinus*	3
Audubon's Shearwater	*Puffinus lherminieri*	13
Frigatebirds		
Magnificent Frigatebird	*Fregata magnificens*	4
Boobies and gannets		
Masked Booby	*Sula dactylatra*	4
Brown Booby	*Sula leucogaster*	9
Red-footed Booby	*Sula sula*	2
Northern Gannet	*Morus bassanus*	1
Anhingas		
Anhinga*	*Anhinga anhinga*	4
Cormorants		
Great Cormorant	*Phalacrocorax carbo*	1
Pelicans		
American White Pelican	*Pelecanus erythrorhynchos*	3
Herons and egrets		
American Bittern	*Botaurus lentiginosus*	4
Least Bittern**	*Ixobrychus exilis*	19
Great Blue Heron*	*Ardea herodias*	8
Great Egret*	*Ardea alba*	2
Snowy Egret	*Egretta thula*	5
Little Blue Heron*	*Egretta caerulea*	3
Tricolored Heron	*Egretta tricolor*	7
Reddish Egret	*Egretta rufescens*	2
Cattle Egret*	*Bubulcus ibis*	3
Green Heron**	*Butorides virescens*	13
Black-crowned Night-Heron	*Nycticorax nycticorax*	4
Yellow-crowned Night-Heron*	*Nyctanassa violacea*	6

Appendix 1. (Continued) Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

English name	Scientific name	Number of specimens
Ibis and spoonbills		
White Ibis*	*Eudocimus albus*	3
Glossy Ibis	*Plegadis falcinellus*	5
Roseate Spoonbill	*Platalea ajaja*	7
Hawks, eagles, kites		
Osprey*	*Pandion haliaetus*	4
Swallow-tailed Kite	*Elanoides forficatus*	10
Northern Harrier	*Circus hudsonius*	3
Sharp-shinned Hawk**	*Accipiter striatus*	12
Cooper's Hawk*	*Accipiter cooperii*	15
Bald Eagle	*Haliaeetus leucocephalus*	2
Mississippi Kite	*Ictinia mississippiensis*	16
Snail Kite	*Rostrhamus sociabilis*	7
Red-shouldered Hawk*	*Buteo lineatus*	12
Broad-winged Hawk	*Buteo platypterus*	14
Short-tailed Hawk	*Buteo brachyurus*	2
Red-tailed Hawk*	*Buteo jamaicensis*	7
Barn owls		
Barn Owl	*Tyto furcata*	4
Owls		
Flammulated Owl	*Psiloscops flammeolus*	1
Eastern Screech-Owl**	*Megascops asio*	26
Great Horned Owl	*Bubo virginianus*	7
Burrowing Owl**	*Athene cunicularia*	14
Long-eared Owl	*Asio otus*	1
Kingfishers		
Belted Kingfisher**	*Megaceryle alcyon*	26
Woodpeckers		
Red-headed Woodpecker	*Melanerpes erythrocephalus*	6
Red-bellied Woodpecker	*Melanerpes carolinus*	15
Yellow-bellied Sapsucker**	*Sphyrapicus varius*	28
Downy Woodpecker	*Dryobates pubescens*	13
Northern Flicker	*Colaptes auratus*	5
Pileated Woodpecker	*Dryocopus pileatus*	11
Falcons		
Crested Caracara	*Caracara cheriway*	4
American Kestrel**	*Falco sparverius*	28
Merlin	*Falco columbarius*	20
Peregrine Falcon	*Falco peregrinus*	17

Appendix 1. (Continued) Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

	English name	Scientific name	Number of specimens
Parrots			
	Monk Parakeet	*Myiopsitta monachus*	2
	Nanday Parakeet	*Aratinga nenday*	1
	Blue-crowned Parakeet	*Thectocercus acuticaudatus*	1
	Mitred Parakeet	*Psittacara mitratus*	1
	Red-masked Parakeet	*Psittacara erythrogenys*	1
Flycatchers			
	Great Crested Flycatcher	*Myiarchus crinitus*	7
	Sulfur-bellied Flycatcher	*Myiodynastes luteiventris*	1
	Eastern Kingbird	*Tyrannus tyrannus*	4
	Gray Kingbird	*Tyrannus dominicensis*	6
	Eastern Wood-Pewee	*Contopus virens*	3
	Yellow-bellied Flycatcher	*Empidonax flaviventris*	1
	Acadian Flycatcher	*Empidonax virescens*	1
	Willow Flycatcher	*Empidonax traillii*	1
	Eastern Phoebe	*Sayornis phoebe*	11
Shrikes			
	Loggerhead Shrike	*Lanius ludovicianus*	13
Vireos			
	White-eyed Vireo	*Vireo griseus*	9
	Yellow-throated Vireo	*Vireo flavifrons*	5
	Blue-headed Vireo	*Vireo solitarius*	6
	Philadelphia Vireo	*Vireo philadelphicus*	1
	Red-eyed Vireo	*Vireo olivaceus*	11
	Black-whiskered Vireo	*Vireo altiloquus*	2
Jays, crows			
	Blue Jay**	*Cyanocitta cristata*	27
	Florida Scrub-Jay	*Aphelocoma coerulescens*	1
	American Crow*	*Corvus brachyrhynchos*	3
	Fish Crow	*Corvus ossifragus*	6
Swallows, martins			
	Bank Swallow	*Riparia riparia*	2
	Tree Swallow	*Tachycineta bicolor*	4
	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	3
	Purple Martin	*Progne subis*	11
	Barn Swallow	*Hirundo rustica*	12
	Cliff Swallow	*Petrochelidon pyrrhonota*	1
	Cave Swallow	*Petrochelidon fulva*	1

Appendix 1. (Continued) Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

English name	Scientific name	Number of specimens
Titmice, chickadees		
Carolina Chickadee	*Poecile carolinensis*	4
Tufted Titmouse	*Baeolophus bicolor*	3
Wrens		
House Wren	*Troglodytes aedon*	1
Sedge Wren	*Cistothorus platensis*	6
Marsh Wren	*Cistothorus palustris*	5
Carolina Wren	*Thryothorus ludovicianus*	10
Gnatcacthers		
Blue-gray Gnatcatcher	*Polioptila caerulea*	10
Kinglets		
Ruby-crowned Kinglet	*Regulus calendula*	5
Thrushes		
Eastern Bluebird**	*Sialia sialis*	26
Veery	*Catharus fuscescens*	5
Gray-cheeked Thrush	*Catharus minimus*	6
Swainson's Thrush	*Catharus ustulatus*	11
Hermit Thrush	*Catharus guttatus*	7
Wood Thrush	*Hylocichla mustelina*	14
American Robin	*Turdus migratorius*	6
Thrashers		
Gray Catbird	*Dumetella carolinensis*	17
Brown Thrasher	*Toxostoma rufum*	17
Bahama Mockingbird	*Mimus gundlachii*	1
Northern Mockingbird	*Mimus polyglottos*	20
Starlings, mynas		
Common Hill Myna	*Gracula religiosa*	1
European Starling	*Sturnus vulgaris*	8
Waxwings		
Cedar Waxwing**	*Bombycilla cedrorum*	19
Wydahs		
Pin-tailed Wydah	*Vidua macroura*	1
Finches, munias		
Scaly-breasted Munia	*Lonchura punctulata*	9
White-rumped Munia	*Lonchura striata*	1
Old World sparrows		
House Sparrow	*Passer domesticus*	7

Appendix 1. (Continued) Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

English name	Scientific name	Number of specimens
Finches		
House Finch	*Haemorhous mexicanus*	13
Purple Finch	*Haemorhous purpureus*	1
American Goldfinch	*Spinus tristis*	12
Emberizid sparrows		
Bachman's Sparrow	*Peucaea aestivalis*	1
Grasshopper Sparrow	*Ammodramus savannarum*	1
Chipping Sparrow	*Spizella passerina*	2
White-throated Sparrow	*Zonotrichia albicollis*	3
Nelson's Sparrow	*Ammospiza nelsoni*	1
Song Sparrow	*Melospiza melodia*	1
Swamp Sparrow	*Melospiza georgiana*	4
Eastern Towhee	*Pipilo erythrophthalmus*	1
Chats		
Yellow-breasted Chat	*Icteria virens*	4
Blackbirds		
Bobolink	*Dolichonyx oryzivorus*	2
Eastern Meadowlark	*Sturnella magna*	4
Orchard Oriole	*Icterus spurius*	2
Spot-breasted Oriole	*Icterus pectoralis*	9
Baltimore Oriole	*Icterus galbula*	2
Red-winged Blackbird**	*Agelaius phoeniceus*	14
Brown-headed Cowbird**	*Molothrus ater*	11
Common Grackle**	*Quiscalus quiscula*	10
Boat-tailed Grackle**	*Quiscalus major*	11
Wood warblers		
Ovenbird	*Seiurus aurocapilla*	15
Worm-eating Warbler	*Helmitheros vermivorum*	8
Louisiana Waterthrush	*Parkesia motacilla*	2
Northern Waterthrush	*Parkesia noveboracensis*	7
Black-and-white Warbler	*Mniotilta varia*	17
Prothonotary Warbler	*Protonotaria citrea*	18
Swainson's Warbler	*Limnothlypis swainsonii*	3
Tennessee Warbler	*Leiothlypis peregrina*	3
Orange-crowned Warbler	*Leiothlypis celata*	1
Connecticut Warbler	*Oporornis agilis*	2
Mourning Warbler	*Geothlypis philadelphia*	1
Kentucky Warbler	*Geothlypis formosa*	3
Common Yellowthroat	*Geothlypis trichas*	8
Hooded Warbler	*Setophaga citrina*	9

Appendix 1. (Continued) Species and sample sizes of birds salvaged at wildlife rehabilitation clinics in Florida, USA, 2015–2020, used in this study. An asterisk (*) indicates common species undersampled in this study; two asterisks (**) indicate a common species oversampled in this study.

English name	Scientific name	Number of specimens
American Redstart	*Setophaga ruticilla*	25
Cape May Warbler	*Setophaga tigrina*	14
Northern Parula	*Setophaga americana*	12
Magnolia Warbler	*Setophaga magnolia*	3
Bay-breasted Warbler	*Setophaga castanea*	3
Blackburnian Warbler	*Setophaga fusca*	1
Yellow Warbler	*Setophaga petechia*	3
Chestnut-sided Warbler	*Setophaga pensylvanica*	3
Blackpoll Warbler	*Setophaga striata*	7
Black-throated Blue Warbler	*Setophaga caerulescens*	23
Palm Warbler	*Setophaga palmarum*	21
Pine Warbler	*Setophaga pinus*	12
Yellow-rumped Warbler	*Setophaga coronata*	13
Yellow-throated Warbler	*Setophaga dominica*	8
Prairie Warbler	*Setophaga discolor*	10
Black-throated Green Warbler	*Setophaga virens*	1
Canada Warbler	*Cardellina canadensis*	1
Wilson's Warbler	*Cardellina pusilla*	1
Cardinals, buntings, grosbeaks		
Summer Tanager	*Piranga rubra*	7
Scarlet Tanager	*Piranga olivacea*	7
Northern Cardinal	*Cardinalis cardinalis*	15
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	7
Blue Grosbeak	*Passerina caerulea*	3
Indigo Bunting	*Passerina cyanea*	13
Painted Bunting	*Passerina ciris*	13
Dickcissel	*Spiza americana*	2

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FIRST RECORDS OF THE "PRAIRIE" MERLIN (*Falco columbarius richardsonii*) IN FLORIDA

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Of the nine subspecies of the Merlin (*Falco columbarius*) that are known worldwide, three occur in North America: the widespread, nominate "Taiga" Merlin (*F. c. columbarius*) breeding from Alaska and Washington east to Newfoundland and Maine; the "Prairie" Merlin (*F. c. richardsonii*) breeding from Alberta and Idaho east to Manitoba and Minnesota; and the "Black" Merlin (*F. c. suckleyi*) restricted to the Pacific Northwest, breeding from Alaska south to Washington (Warkentin et al. 2005, Dunn and Alderfer 2017). The "Black" Merlin is largely resident, with some individuals wintering south to California and New Mexico. In contrast, the other two North American subspecies are highly migratory. "Taiga" Merlins winter across much of the United States, including Florida, south through Central America and the West Indies to northern South America. "Prairie" Merlins winter in the center of the continent south to Central America (Warkentin et al. 2005, Dunn and Alderfer 2017). The occurrence of the "Prairie" Merlin in Florida was not known to Howell (1932) or Stevenson and Anderson (1994) and has not been reported in the published literature subsequently (e.g., Greenlaw et al. 2014). In this note, we document the first two records of the "Prairie" Merlin subspecies in Florida, both obtained from checklists submitted to eBird (Sullivan et al. 2009).

Methods

Photographs uploaded to eBird checklists are archived in the Macaulay Library at the Cornell Lab of Ornithology in Ithaca, New York. We examined every Merlin photograph from Florida that was archived in the Macaulay Library through 23 September 2020, a total of 2,422 images of approximately 1,617 individuals. To determine how many Merlins could be identified conclusively to subspecies, AL examined 2,045 images on 12–13 December 2019, and BP examined 254 images on 28 March 2020 and 123 images on 24 September 2020. Field marks used to separate "Prairie" Merlins from "Taiga" Merlins or their intergrades included a plain face with an indistinct "moustache" or "sideburn," rufous streaking on white underparts, and the underside of the tail marked with well-defined black and white bands (Clark and Wheeler 2001; Figs. 1–2). Male "Prairie" Merlins have a light gray-blue mantle (often with thin, black shaft-streaks) that is paler than that of male "Taiga" Merlins. Adult female "Prairie" Merlins have a pale, nearly sand-colored mantle, often with light-tan edging to most feathers (Clark and Wheeler 2001).

Results

Of the 2,422 images of Merlins from Florida that were archived in the Macaulay Library through 23 September 2020, greater than 99.9% represented single individuals;

two images showed two individuals each. Three photographs, of two individuals, represented "Prairie" Merlins, and both were adult males (Figs. 1–2). Both records were from the central peninsula, one along the Gulf of Mexico and one inland:

One male photographed at Honeymoon Island State Park, Dunedin, Pinellas County, Florida, on 16 April 2018 (Hoffman 2018; Fig. 1); and

One male photographed at Nichols Pond, west of Oxford, Sumter County, Florida, on 5 December 2019 (Richard 2019; Fig. 2).

We found several other candidates for "Prairie" Merlins in the Macaulay Library from Florida but chose to exclude them because the photographs were not conclusive to subspecies. Almost all other Merlin images from Florida represent the "Taiga" subspecies. Several other individuals that cannot be assigned to a particular subspecies may represent "Taiga" × "Prairie" intergrades. Not surprisingly, given their restricted range along the Pacific coast and their mostly sedentary habits, no Merlin photographed in Florida showed characters of the "Black" subspecies.

Photographs of 10 purported Merlins taken in Florida and archived in the Macaulay

Figure 1. Adult male "Prairie" Merlin (*Falco columbarius richardsonii*) at Honeymoon Island State Park, Dunedin, Pinellas County, Florida, on 16 April 2018. This individual furnishes the first definitive record of *richardsonii* for Florida. Photograph by Jennifer Hoffman.

Figure 2. Adult male "Prairie" Merlin at Nichols Pond, Sumter County, Florida, on 5 December 2019—note the dragonfly prey. This individual furnishes the second definitive record for Florida. Photograph by Douglas Richard.

Library represented other species: two Sharp-shinned Hawks (*Accipiter striatus*), three Red-shouldered Hawks (*Buteo lineatus*), one Broad-winged Hawk (*B. platypterus*), and four American Kestrels (*Falco sparverius*). We reported these misidentifications to eBird reviewers to allow the identifications to be corrected.

Discussion

Due to the propensity for Merlins to perch on tall, bare branches and to allow close approach, assessing plumages from most of the images in the Macaulay Library was not difficult and could be done with confidence. The very recent occurrence of "Prairie" Merlins in Florida, with single records in 2018 and 2019, when none was known previously (e.g., Stevenson and Anderson 1994, Greenlaw et al. 2014), probably is the result of a great increase in *richardsonii* populations since the 1960s. This population increase is thought to be due to the banning of organochlorine pesticides such as dichlorodiphenyltrichloroethane (DDT) and reduced persecution from humans (Warkentin et al. 2005). The massive growth of eBird since its inception in 2002 is also responsible for the discovery of "Prairie" Merlins in Florida—both records initially were published at ebird.org. Through 23 September 2020, 1.64 million eBird checklists containing 1.03 million bird photographs have been submitted to eBird from Florida. We anticipate that records of "Prairie" Merlins in Florida will continue to increase, and

we encourage birders in the state to document their sightings with photographs posted to eBird or with reports sent to the Florida Ornithological Society Records Committee.

Acknowledgments

We are grateful to William S. Clark, Don Fraser, and Jon Greenlaw for improving drafts of the manuscript. Brian Sullivan, the Digital Publications Lead at the Cornell Lab of Ornithology, reviewed the photographs we selected as candidates for "Prairie" Merlins. Jennifer Hoffman and Douglas Richard kindly provided the images in Figures 1 and 2, which greatly enhance our note. Andrew Kratter, the collections manager at the Florida Museum of Natural History at the University of Florida in Gainesville, Florida, helpfully confirmed to us that the Museum has not received any recent specimens of *richardsonii*.

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REVIEW

Florida Birds Exposed, by Juanita N. Baker. 2019. Pelican Island Audubon Society, Vero Beach, Florida. ISBN 978-0-578-570-58-7. $29.95 softcover. 222 pages.

Juanita Baker is a retired clinical psychologist and a Professor Emerita at the School of Psychology, Florida Institute of Technology, in Melbourne, Florida. She and her husband Richard live in Sebastian and have long been associated with Pelican Island Audubon Society (PIAS). In 2009, Baker instituted a "photo of the month" feature for PIAS; these photographs were published in the Society's journal *The Peligram* and form the basis of this book. Baker began the photo feature as a means of educating photographers on the importance of not disturbing birds.

The book's introductory material includes "The Story of Florida's Birds," which presents their evolution and the impacts from humans over the past 14,000 years; a primer on selected Florida ecosystems with brief lists of birds found in each; migration seasons and routes, illustrating the Mississippi and Atlantic flyways; an explanation of the different categories of Florida's birds (e.g., permanent resident, winter resident, migrant, vagrant); conservation topics such as the importance of prescribed fire and the public acquisition of additional lands; how to be a better birder, and how to be a better photographer. Baker's poetry and quotations from others are interspersed throughout. The book includes a Table of Contents but not an Index.

Following the introductory material are full-page accounts for 75 species of birds. The accounts present biological data on each species, especially as they pertain to Florida, and often reference the accompanying photographs. On the facing page is the full-page "Photo of the Month" for that species. Baker referenced the Birds of North America (now Birds of the World) series produced by the Cornell Lab of Ornithology in Ithaca, New York for the biological information that she provides. She avoids using overly technical terms that might be off-putting to many of her readers. The taxonomy follows the 2018 version of the Florida Ornithological Society Official Bird List, except that families are organized by their primary food items, with aquatic non-passerines followed by land-dwelling non-passerines, and then by passerines. Forty references are cited in the text via superscript numerals.

Florida Birds Exposed contains 227 bird photographs and 17 habitat photographs taken by 53 photographers. The photographs represent 142 species, about half of which are accompanied by full-page species accounts. Perhaps not surprisingly, considering their abundance and conspicuousness in Florida, the book emphasizes non-passerines (most notably wading birds and shorebirds) over passerines. The three most-represented species are Reddish Egret (*Egretta rufescens*; eight photographs), Roseate Spoonbill (*Platalea ajaja*; seven photographs), and Black Skimmer (*Rhynchops niger*; five photographs). Passerines represent 29% of the species and 25% of the photographs, with each species represented by one or two photographs.

Baker has chosen well the images found in the book; most are first-rate. Personal favorites include a Wilson's Plover (*Charadrius wilsonia*) sheltering two chicks, a Bonaparte's Gull (*Chroicocephalus philadelphia*) in flight, a Sandhill Crane (*Antigone canadensis*) and colt, a Least Bittern (*Ixobrychus exilis*) foraging, a Great Egret (*Ardea alba*) and Snowy Egret (*Egretta thula*) in aigrette displays, a head-shot of a Black Vulture (*Coragyps atratus*), a preening Swallow-tailed Kite (*Elanoides forficatus*), a foraging Snail Kite (*Rostrhamus sociabilis*; but the claimed 17-mm focal length must be in error), two nestling Eastern Screech-Owls (*Megascops asio*), a perched Belted Kingfisher

(*Megaceryle alcyon*), a Prairie Warbler (*Setophaga discolor*) and Blue-gray Gnatcatcher (*Polioptila cerulea*) sharing a perch, an eastern Grasshopper Sparrow (*Ammodramus s. savannarum*), and a leucistic Yellow-rumped Warbler (*Setophaga coronata*). I was unaware of the record, so I was surprised by the photograph of a black-backed Western Spindalis (*Spindalis z. zena*) at Vero Beach, Indian River County, during 21–29 April 2017. Discovered by Will Johnson, his photographs document the northernmost record of the species in Florida (and the United States).

Commendably, all photographs in the book were taken in Florida, and all but one are correctly identified. The crow duo at Paurotis Pond, Everglades National Park, Miami-Dade County almost certainly represents American Crows (*Corvus brachyrhynchos*) rather than Fish Crows (*C. ossifragus*) because the latter species is quite rare in the park, whereas the former is common and conspicuous. I was impressed that Baker includes a photograph of Mallard (*Anas platyrhynchos*) × Mottled Duck (*A. fulvigula*) hybrids or backcrosses, a form that is usually overlooked in Florida.

Except for two pages devoted to some of the more common and better-known species, exotic birds are not featured. I understand Baker's reluctance to feature exotic birds in a book with a conservation theme, but I disagree with her claim that most exotic birds are negatively affecting native species and habitats. As an example, she states that Mute Swans (*Cygnus olor*) ". . . damage Florida's ecology . . . and displace our native bird species," but the species is a human commensal primarily restricted to a few lakes in downtown Lakeland and downtown Orlando. Mallard is an exotic in Florida only as a breeding species; "wild" individuals regularly winter in northern Florida. The inclusion of Tricolored Munia (*Lonchura malacca*) in the list of Florida's established exotic birds is strange, given that there are fewer than ten records in the state, all of them of singles. Budgerigars (*Melopsittacus undulatus*) have been extirpated since 2014 (Pranty 2015, The disappearance of the Budgerigar from the ABA Area, Birding 47[4]:34–40).

The captions for most photographs in the book include very specific photographic details, including the make and model of the camera body and lens, the focal length, ISO setting, shutter speed, and f-stop. Although important to some photographers, these details will be of little or no use to most readers of this book. The location within Florida is listed for nearly every photograph, but the year the photograph was taken is never presented, and the month is shown as a simply a two-digit code (e.g., 04 for April). If Baker revises her book, then I suggest that she provide the full date and the location (including county) for every photograph. Knowing the seasonality and location of a photograph helps the reader to understand bird distribution and biological aspects such as breeding phenology, plumage sequences, and molt periods.

I noted several errors, mostly typographical (e.g., "Rich" rather than Ritch Grissom, "Fort Desota State Park" rather than Fort De Soto [county] Park), and misspellings of Phasianidae, Phalacrocoracidae, Aramus, Haliaeetus, Myiarchus, and Hirundinidae. Fishes, not birds, are the most diverse class of vertebrates. Limpkin and Snail Kite may be (mostly) limited to Florida in the United States, but both species occur widely in the American tropics.

These quibbles aside, I enjoyed reading the text and leafing through the beautiful photographs in *Florida Birds Exposed*, and I thank Juanita Baker and Pelican Island Audubon Society for stressing conservation of the state's magnificent birdlife. The book deserves to be in selected public libraries and could serve as a model for other bird clubs to produce books on their local avifauna.

I thank Juanita Baker and Larry Manfredi for answering questions. Valeri Ponzo read a draft of the manuscript.

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FIELD OBSERVATIONS

Spring Report: March–May 2020.—This report consists of significant bird observations compiled by the Field Observations Committee (FOC). Electronic submissions to the FOC should be in the following format: species, number of individuals, age and sex of the bird(s), color morph if applicable, location (including county), date, observer(s), and significance. Seasons are winter (December–February), spring (March–May), summer (June–July), and fall (August–November). Submit observations to regional compilers within two weeks after the close of each season, or to the state compiler within one month. Addresses of the compilers follow this report.

Sight-only observations are considered "reports," whereas only those observations supported by verifiable evidence (photographs, video or audio recordings, or specimens) are called "records." Species for which documentation is required by the FOC and by the FOS Records Committee (FOSRC; <fosbirds.org/official-florida-state-bird-list>) are marked here with an asterisk (*). A county designation (in italics) accompanies the first-time listing of each site in this report. Abbreviations in this report are: AFB = Air Force Base, AFR = Air Force Range, EOS = end of season, m. obs. = many observers, NERR = National Estuarine Research Reserve, NP = National Park, NSRA = North Shore Restoration Area, NWR = National Wildlife Refuge, SF = State Forest, SP = State Park, STA = Stormwater Treatment Area, STF = sewage treatment facility, WMA=Wildlife Management Area, and N, S, E, W, etc., for compass directions. Bold-faced entries denote birds newly reported or verified in Florida, or record numbers. Photographs or video- or audio-recordings archived by the FOC are identified by a plus (+).

Summary of the Spring Season

State review species noted in this report include American Black Duck, Inca Dove, Vaux's Swift, Hudsonian Godwit, Heermann's Gull, Yellow-green Vireo, White Wagtail, and Black-throated Gray Warbler.

Species Accounts

Black-bellied Whistling-Duck: 80 at Rabon Road Pond (*Jefferson*) 7 March (M. Smith, A. Smith); 2 at Shell Bay (*Duval*) 20 Apr (K. Dailey, M. Dailey).

Fulvous Whistling-Duck: 2 at Fellsmere Grade Recreation Area (*Brevard*) 9–14 Apr (S. Brookens).

Greater White-fronted Goose: 2 at The Villages (*Sumter*) 5–19 Mar (M. Pitcher).

Snow Goose: 1 at Patrick AFB (*Brevard*) 16 Mar (J. Lageneck).

*American Black Duck: 5 at Saint Marks NWR (*Wakulla*) 3 Mar (D. Morrow).

Cinnamon Teal: 1 at Black Point Wildlife Drive (*Brevard*) 1–11 Mar (m. obs.).

Greater Scaup: 2 at East Gator Creek (*Brevard*) 9 May (S. Fitzgerald).

American Flamingo: 1 at Saint Marks NWR 1 Mar–EOS (+D. Morrow).

*Inca Dove: 1 at Pensacola (*Escambia*) 30 Mar (S. Hinton).

Black-billed Cuckoo: 1 at Gainesville (*Alachua*) 25 Apr (A. Zions); 1 at Chassahowitzka WMA (*Alachua*) 3 May (B. Hansen).

Eastern Whip-poor-will: 1 at W Pensacola 8 Mar (C. Tebay).

*Vaux's Swift: 1 at Gainesville to 7 Mar (B. Hall, B. Ewing).

Black Rail: 1 recovered at Pensacola Beach (*Escambia*) 26 Mar and taken to Wildlife Rescue Sanctuary of NW FL (D. Kaufmann).

King Rail: 21 at International Paper Wetlands (*Escambia*) 10 Apr (J. Callaway, B. Callaway).

Sora: 110 at International Paper Wetlands 21 Apr (J. Callaway, B. Callaway).
Gray-headed Swamphen: Up to 2 at Sweetwater Wetlands Park (*Alachua*) throughout the season (T. Hardin et al.).
Purple Gallinule: 36 at International Paper Wetlands 5 May (J. Callaway, B. Callaway).
Limpkin: 13 at Cape San Blas Road (*Gulf*) 30 May (P. McCleod, R. McCleod).
Whooping Crane: 1 at Paynes Prairie Preserve SP (*Alachua*) 10 May–EOS (S. Mallard, A. Conrad).
Semipalmated Plover: Up to 12 at Paynes Prairie Preserve SP 25 Apr–19 May (T. Hardin, C. Poli).
Upland Sandpiper: 6 at Cross Creek (*Alachua*) 20 Apr (P. Fuller).
Whimbrel: 2 at Huguenot Memorial Park (*Duval*) 19 Apr (K. Dailey).
*Hudsonian Godwit: 1 at Black Point Wildlife Drive 23 May (+W. Chatfield-Taylor).
Marbled Godwit: 2 at Okaloosa Island (*Okaloosa*) 28 Apr (M. Swan, S. Hobson).
Stilt Sandpiper: 1 at Saint Marks NWR 31 Mar (D. Morrow).
Sanderling: 1 at Newnans Lake (*Alachua*) 3 May (A. Kent, G. Kent).
White-rumped Sandpiper: 16 at Saint Marks NWR 22 Apr (D. Morrow); 4 at Pumphouse Road (*Brevard*) 22 Apr–24 May (+A. Whitlock); 1 at Big Talbot Island SP Spoonbill Pond (*Duval*) 10 May (K. Dailey).
Pectoral Sandpiper: 6 at T. M. Goodwin WMA (*Brevard*) 5 Mar (+C. Newton); 1 at Black Point Wildlife Drive 5–26 Mar (+B. Day).
Semipalmated Sandpiper: 2 at Black Point Wildlife Drive 22 Mar–2 Apr (C. Ferro).
Wilson's Phalarope: 1 at Sweetwater Wetlands Park 15 Apr (T. Hardin, R. Rowan); 1 at E Gulf Breeze (*Santa Rosa*) 25 Apr (M. Brower); 1 at Pumphouse Road 2–4 May (J. Leavens); 1 at Gulf Islands National Seashore 5–6 May (J. Schiro).
Pomarine Jaeger: 1 offshore Alligator Point (*Franklin*) 31 May (+J. Murphy).
*Heermann's Gull: 1 at Kathryn Abbey Hanna Park (*Duval*) 8 May–EOS (K. Dailey).
Glaucous Gull: 1 at Pensacola 27 Mar–3 Apr (D. Horton, B. Duncan, L. Duncan); 1 at Huguenot Memorial Park (*Duval*) 15 Apr (K. Dailey).
Brown Noddy: 1 at Pensacola Beach (*Escambia*) 19 May taken to Wildlife Sanctuary of NW FL (D. Kaufmann).
Sooty Tern: 2 at Saint George Island (*Franklin*) 12 Apr (B. Kinzie, J. Murphy).
Least Tern: 20 at E Eau Gallie Boulevard (*Brevard*) 20–27 Mar (R. Peipert).
Gull-billed Tern: 2 at Shell Bay, Little Marsh Island (*Duval*) 17 Apr (K. Dailey); 2 at Paynes Prairie Preserve SP 29 May (J. Mays).
Caspian Tern: 2 at Sweetwater Wetlands Park 16 Apr (M. Manetz).
Common Tern: 1 at Merritt Island NWR (*Brevard*) 10 Apr (C. Newton).
Royal Tern: Up to 12 at Sweetwater Wetlands Park 15–20 Apr (T. Hardin, D. Alvarez).
Black Skimmer: 1 at Paynes Prairie Preserve SP 16 Mar (R. Rowan); 1 at Newnans Lake 24 Apr (D. Segal).
Red-throated Loon: 1 at Gulf Breeze 17 Apr (B. Duncan, L. Duncan).
Common Loon: 2,190 migrated over *Alachua* at up to 8 observation stations 12 Mar–25 Apr, with a peak of 325 on 31 Mar (*fide* A. Kratter).
Magnificent Frigatebird: 1 at Big Talbot Island SP Spoonbill Pond 7 May (K. Dailey, M. Dailey).
Brown Pelican: 5 at *Alachua* 23 Mar–9 May (C. Anderson, C. Poli).
Least Bittern: 65 at International Paper Wetlands 29 May (J. Callaway, B. Callaway).
Great Blue Heron: 1 (Great White Heron) at Claude Edge Front Street Park (*Brevard*) 8–9 Apr (D. Simpson); 1 (Great White Heron) at Millennium Beach Park (*Brevard*) 27 May (D. Simpson).
Glossy Ibis: 2 at Floridatown (*Santa Rosa*) 24 May (M. Lehmann); 1 at the Okaloosa County STF (*Okaloosa*) 27 May (M. Swan).
White-faced Ibis: 1 at Okaloosa County STF 17 Apr (R. Jamieson); 1 at Walnut Hill (*Escambia*) 19 Apr (R. Jamieson).

Roseate Spoonbill: 2 at NW Tallahassee (*Leon*) 1 Apr (T. Tanaka, J. Stevenson).

Snail Kite: 2 adult females at Withlacoochee River (*Sumter*) 15 Mar (D. Richard, K. Lynn); 1 immature at Withlacoochee River (*Citrus*) 15 Mar (D. Richard, K. Lynn); 1 at Lake Panasoffkee (*Sumter*) 26 Mar (J. Bechtel); 146 at Paynes Prairie Preserve SP 7 Apr (*fide* C. Poli); 1 at Wacissa River headwaters (*Jefferson*) 22 Apr (S. Kiser, M. Kiser); 1 east of Brooksville 17 May (D. Grimes).

Mississippi Kite: 1 at Eastman/Taminco Sanctuary (*Santa Rosa*) 9 Mar (L. Kelly).

Northern Harrier: 1 at T. M. Goodwin WMA 7 May (V. Gallogly).

Broad-winged Hawk: 1 at Grant Flatwoods (*Brevard*) 10 Apr (D. Simpson).

Short-tailed Hawk: 1 at Crystal River 21 Mar (P. Laipis); 1 at Coleman (*Sumter*) 21 Apr–8 May (D. Robbins, D. Richard).

Burrowing Owl: 2 at Orlando Melbourne International Airport (*Brevard*) 21 Apr (E. Ravecca).

Belted Kingfisher: 1 male at Bystre Lake (*Hernando*) through 24 May (D. Fraser).

Hairy Woodpecker: 1 at Micco Scrub Sanctuary (*Brevard*) 11 Mar–7 May (D. Simpson); 1 at W Pensacola 17 Mar (E. Blomberg).

Nanday Parakeet: 3 at Crescent Avenue (*Brevard*) 28 Apr and 13 May (L. Pernas-Giz).

Least Flycatcher: 1 at Okaloosa County Veterans Memorial Park (*Okaloosa*) 11 Apr (B. Purdy).

Vermilion Flycatcher: 1 at Saint Marks NWR 9 Mar (B. Phelan).

Ash-throated Flycatcher: 2 at Dixie's Park (*Brevard*) 1 Mar–26 Apr (m. obs.); 1 at Okaloosa County STF 15–18 Mar (B. Purdy).

Western Kingbird: 2 at Dixie's Park 1–16 Mar (m. obs.); up to 4 at Crescent Drive (*Brevard*) 1 Mar–13 Apr (m. obs.); 1 at Gulf Breeze 14 Apr (B. Duncan, L. Duncan).

Gray Kingbird: 1 at Lake Panasoffkee 27 Apr (D. Segal).

Scissor-tailed Flycatcher: 1 at Okaloosa County STF 5–16 Apr (B. Purdy, M. Swan).

Philadelphia Vireo: 1 at Bald Point SP (*Franklin*) 26 Apr (J. Murphy).

*Yellow-green Vireo: 1 at Okaloosa County Veterans Memorial Park 29–30 Apr (M. Swan, S. Hobson).

Black-whiskered Vireo: 1 at Maritime Hammock Preserve (*Brevard*) 7 Apr (T. Ledford); 1 at Maritime Hammock Sanctuary (*Brevard*) 25 Apr (W. Chatfield Taylor); 1 at Turkey Creek Sanctuary 25 Apr (A. Whitlock); 1 at Bald Point Road (*Franklin*) 25 Apr (+D. Beach, T. Beach); 1 at Lori Wilson Park (*Brevard*) 2 May (P. Mansfield); 1 at Orlando Park (*Brevard*) 3 May (C. Ferro); 1 at Alligator Point (*Franklin*) 13 May (+J. Murphy).

Cave Swallow: 1 at Okaloosa County STF 11 Apr (B. Purdy).

Carolina Chickadee: 1 at Fox Lake Park (*Brevard*) 1 Apr (Glenn Peterson); 1 at Range Road/Hooper Road (*Brevard*) 21 Apr (M. Roberts).

White-breasted Nuthatch: 4 at Tallahassee (*Leon*) 1–27 May (S. Phillips).

Brown Creeper: 1 at Fawn Lake (*Brevard*) 2–11 Mar (B. Rohman).

Winter Wren: 1 at Gainesville through 28 Mar (T. Hardin, A. Shapiro, J, Ewert).

Veery: 1 at 444 Crescent Drive 24 Mar (+L. Pernaz-Giz); 22 at *Alachua* 25 Mar–9 May (B. Shea, B. Pirzer); 1 at Gleason Park (*Brevard*) 5 May (D. Simpson).

Hermit Thrush: 1 at Turkey Creek Sanctuary 25 Apr (+A. Whitlock).

American Robin: 1 at Inverness 9 May (E. Smith); 5 at Ensley (*Escambia*) 28 May (J. Callaway).

*White Wagtail: 1 at Saint George Island SP (*Franklin*) 18 May (J. Cavanagh).

American Goldfinch: 1 at E Gulf Breeze 11 May (M. Brower).

Worm-eating Warbler: 1 at Gulf Breeze 11 May (B. Duncan, L. Duncan).

Louisiana Waterthrush: 1 near Lake Jackson (*Leon*) 1 Mar (J. Cavanagh); 1 at Holt (*Okaloosa*) 30 May (M. Swan).

Northern Waterthrush: 1 at Gulf Breeze 16 Mar (B. Duncan, L. Duncan).

Golden-winged Warbler: 1 at Gainesville 4 May (C. Poli); 1 at Maritime Hammock Sanctuary 9 May (W. Chatfield-Taylor).

Blue-winged Warbler: 4 at *Alachua* 22 Mar–18 Apr (J. Donsky, T. Hardin et al.); 1 at Orlando Park 8 May (M. Berg).

Black-and-white Warbler: 1 female at Erna Nixon Park (*Brevard*) 27 May (D. Simpson).

Swainson's Warbler: 1 at Miccosukee (*Leon*) 29 Mar–3 Apr (B. Phelan); 1 at Maritime Hammock Sanctuary 21 Apr (C. Cimino); 1 at Sweetwater Wetlands Park 25 Apr (M. Chappell).

Orange-crowned Warbler: 1 at Lori Wilson Park 1 Apr (P. Mansfield).

Connecticut Warbler: 1 at Gainesville 11–12 May (D. Alvarez, C. Burney); 1 at Aripeka Sandhills (*Pasco*) 12 May (V. Capp); 1 at Gulf Breeze 15 May (B. Duncan, L. Duncan).

Kentucky Warbler: 2 at *Alachua* 9–12 Apr (A. Casella, R. Robinson).

American Redstart: 1 at Fort Pickens (*Escambia*) 31 May (P. Doggrell).

Cape May Warbler: 1 at Dixie's Park 31 Mar (A. Whitlock).

Cerulean Warbler: 1 at Indialantic Beach (*Brevard*) 24 Apr (T. Ledford); 2 at Saint Marks NWR 26 Apr (D. Morrow).

Magnolia Warbler: 12 at *Alachua* 22 Apr–8 May (T. Hardin, C. Burney).

Bay-breasted Warbler: 4 at *Alachua* 17 Apr–2 May (G. Parks, F. Goodwin).

Blackburnian Warbler: 1 female at Fort Island Gulf Beach (*Citrus*) 14 May (E. Roche).

Yellow Warbler: 1 at W Main Street (*Brevard*) 7 Mar (B. Taylor); 6 at *Alachua* 17 Apr–17 May (A. Zions, R. Rowan); 1 at Fort Cooper SP (*Citrus*) 20 May (H. Nagy).

Blackpoll Warbler: 1 female at Millennium Beach Park 27 May (D. Simpson).

Black-throated Blue Warbler: 2 at Fort Pickens (*Escambia*) 17 May (D. Muth).

Yellow-rumped Warbler: 1 at Maritime Hammock Preserve 3 May (C. Ferro).

*Black-throated Gray Warbler: 1 at Inverness 28 Mar (E. Smith).

Black-throated Green Warbler: 11 at *Alachua* 11 Apr–6 May (G. Parks, B. Pirzer).

Wilson's Warbler: 1 at Paynes Prairie Preserve SP to 22 Mar (T. Hardin, J. Donsky).

Yellow-breasted Chat: 1 at Milton (*Santa Rosa*) 7 Mar (M. Lehmann).

Bachman's Sparrow: 2 at Saint Marks NWR 8 Apr (B. Phelan).

Chipping Sparrow: 1 at Burgess Avenue (*Brevard*) 19 May (S. Anderson).

Clay-colored Sparrow: 1 at LeRoy Wright Park (*Brevard*) 10 Mar–4 Apr (+M. Harris); 1 east of Brooksville through 13 Apr (J. Mann, S. Mann).

Field Sparrow: 1 east of Brooksville through 9 Mar (J. Mann, S. Mann).

Lark Sparrow: 1 at Watermelon Pond (*Alachua*) 15–22 Mar (A. Kent, C. Faulhaber)

Le Conte's Sparrow: 1 at Sweetwater Wetlands Park to 8 Mar (K. Magee, T. Hardin).

Fox Sparrow: 1 at Gainesville to 2 Mar (E. Amundson).

Lincoln's Sparrow: 1 at Fay Lake Wilderness Park (*Brevard*) 12–19 Apr (+C. Ferro).

White-throated Sparrow: 1 at Hernando (*Citrus*) 6–18 Mar (H. Nagy).

White-crowned Sparrow: 1 at Okaloosa County STF 2 May (B. Purdy).

Scarlet Tanager: 1 at Visitor Center, Merritt Island NWR (*Brevard*) 11 Mar (L. Walters); 1 at L. Kirk Edwards Wildlife and Environmental Area (*Leon*) 11 May (S. Kiser); 1 at Lake Panasoffkee (*Sumter*) 14 May (D. Richard).

Western Tanager: 1 at Newberry (*Alachua*) to 20 Mar (J. O'Connor, K. O'Connor); 1 at Tallahassee 2–22 Mar (S. Phillips); 1 at Shalimar (*Okaloosa*) 14 Mar–26 Apr (C. Porch, B. Purdy).

Rose-breasted Grosbeak: 1 at Pace (*Santa Rosa*) 8 Mar (L. Kelly).

Dickcissel: 1 at Milton 9 Mar–19 Apr (M. Lehmann); 1 at Maritime Hammock Sanctuary 25 Apr (D. Simpson); 1 at Okaloosa County STF 2 May (B. Purdy).

Bobolink: 1 male at LeRoy Wright Park 13 Apr (+M. Harris).

Rusty Blackbird: Up to 31 at Sweetwater Wetlands Park to 25 Apr (T. Hardin).

Shiny Cowbird: 1 at Saint George Island SP (*Franklin*) 21 May (+K. Coates).

Bronzed Cowbird: 1 at Saint Marks NWR 3 Apr (+K. Coates); 1 at Destin (*Okaloosa*) 17 Apr (C. Saleeby).

Orchard Oriole: 1 at LeRoy Wright Park 26 Mar (+M. Harris).

Acknowledgments

This report is the twenty-first seasonal report published since I took on the state compiler role in spring 2015. After five years in this role, and nine years overall on the Field Observations Committee, it is time to focus my discretionary time in other areas. I am grateful to have had the opportunity to serve the FOS and for all the relationships made or strengthened over that time. I am especially appreciative of the hard work, dedication, and support provided by the regional compilers and would like to acknowledge each for their efforts. These reports would not have been possible without them: Bruce Anderson, Robin Diaz, Bob Duncan, Lucy Duncan, Jim Eager, Charlie Ewell, Bev Hansen, John Murphy, David Sherer, and Ron Smith.

It has been incredibly difficult to get new individuals for the regional and state compiler roles as committee members have rotated off their years-long volunteer assignments. The report has dwindled in content as we have lost coverage for over half the Florida counties in recent years. As a result, this may be the last published seasonal summary for the FOS. Thank you to all who have contributed over the years in making this a key part of the *Florida Field Naturalist* for decades.

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FLORIDA ORNITHOLOGICAL SOCIETY, INC.
TREASURER'S REPORT - 2019

Account balances as of December 31, 2019:

Account	**Balance**
Fidelity Account	$249,600.47
PayPal Account	24.15
Petty Cash	8.26
Total Assets	**$249,632.88**
Sales Tax Liability	(120.65)
Net Assets	**$249,512.23**

Fund balances as of December 31, 2019:

Fund	**Balance**
General Operating Fund	$65,422.03
Special Publications Fund	52,591.88
Cruickshank Fund	53,038.64
Robertson Fund	25,227.66
Endowment Fund	40,262.15
Friends of FFN	6,835.22
Student Travel and Awards Fund	6,134.65
Total Assets	**$249,512.23**

2019 Revenue and Expenses:

Revenue	**Amount**	**Expenses**	**Amount**
Annual Membership Dues	$6,775.00	FFN Printing	$7,340.97
Life Membership Dues	400.00	Postage & Shipping	427.71
Page Charges	700.00	Operating Expenses	755.27
Meetings	7,038.00	Cost of T-shirt Sales	885.57
Special Publication Sales	18.43	Meetings	5,337.16
Shirt Sales	1,400.92	Records Committee	971.49
Miscellaneous	2.00	Cruickshank Award	2,409.00
Gifts General Operating Fund	2,020.00	Roberstson Award	1,500.00
Gifts Cruickshank Fund	110.00	Keys Hawkwatch	350.00
Gifts Robertson Fund	160.00	PayPal Fees	158.46
Gifts Endowment Fund	120.00		
Gifts Friends of FFN	1,560.00		
Increase in Investments	46,118.31		
Total	**$66,422.66**	**Total**	**$20,135.63**

Change in Net Assets:

Totals	**Balance**
Net Assets December 31, 2018	$203,225.20
Total Revenue 2019	66,422.66
Total Expenses 2019	(20,135.63)
Net Assets December 31, 2019	**$249,512.23**

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Contributions to FRIENDS OF FFN will be added to a special endowment of FOS, the interest of which will be used to improve the journal. Please write a check payable to the Florida Ornithological Society and specify that the gift is for FOS Friends of FFN. Send your check to the Treasurer: Charles H. Fisher, Jr., c/o Reilly, Fisher & Solomon PA, 4950 W. Kennedy Blvd., Ste. 610, Tampa, FL 33609. Email: chf1shercpa@hotmail.com

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